



VIA EMAIL

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November 8, 2019

Re: *United States and State of Texas v. City of Houston, Texas*, D.J. Ref. No. 90-5-1-1-08687/1

To the Assistant Attorney General for the Environment and Natural Resources Division, on behalf of the United States, and to Mr. Ledbetter, on behalf of the State of Texas:

Bayou City Waterkeeper¹ is a nonprofit advocacy organization working to protect and restore the waters and wetlands making up the Lower Galveston Bay Watershed, which fully encompasses Houston's city limits.² In July 2018, Bayou City Waterkeeper served the City of Houston ("City") with a notice of intent to sue over more than 9,300 potential Clean Water Act violations affecting waters and communities within this watershed, which led to an enforcement action by the EPA and State of Texas, a citizen suit, and now, this consent decree.

Despite Bayou City Waterkeeper's role in the underlying litigation, this comment period is our first meaningful opportunity to give substantive input to the consent decree. We appreciate this opportunity, and we urge the United States and the State of Texas (together, the "Agencies"³) to consider our comments carefully. The Agencies must withhold your consent and work to modify the consent decree "if the comments regarding the Consent Decree disclose facts or considerations indicating that the Consent Decree is inappropriate, improper, or inadequate."⁴

¹ Bayou City Waterkeeper, 2010 N. Loop West, Ste 103, Houston, TX 77018, www.bayoucitywaterkeeper.org

² H-GAC, Map of Upper and Lower Galveston Bay Watersheds, http://www.h-gac.com/galveston-bay-plan/documents/GBEP_Map_2.pdf

³ Unless otherwise noted, this term encompasses the United States, the U.S. Department of Justice, U.S. Environmental Protection Agency, the State of Texas, the Texas Attorney General, and the Texas Commission on Environmental Quality.

⁴ Draft Consent Decree, ¶ 138; see also Texas Water Code § 7.110(c) ("The attorney general shall promptly consider any written comments and may withdraw or withhold consent to the proposed order, judgment, or other agreement if the

To expedite resolution of the issues raised by some of these comments, Bayou City Waterkeeper has proposed draft language throughout these comments. Bayou City Waterkeeper welcomes the opportunity to meet so we can collaboratively address and implement this language and the recommendations embodied by the remaining comments.

I. Background

Houston is the fourth largest city in the United States, with a population of more than 2.3 million people spread over nearly 700 square miles. The City owns and operates one of the largest separate sewer systems in the country, consisting of 39 wastewater treatment plants and a collection system with more than 6,800 miles of sewer pipe and 383 lift stations.

Sewer overflows have long been an issue across Houston's wastewater network. Because these overflows violate the Clean Water Act and the Texas Water Code, the City has entered multiple settlement agreements with federal and state regulators several times over the last 30 years. Despite spending at least \$3 billion,⁵ the problem has persisted. Most recently, after completing \$755 million in work under a 2005 agreement with the State of Texas, Houston continued to report a similar (and in some cases higher) number of unpermitted discharges and sanitary sewer overflows.

Bayou City Waterkeeper's July 2018 notice of intent to sue identified 9,319 sanitary sewer overflows and other potentially unlawful discharges from the City's wastewater facilities from July 2013 to 2018, not including those reported during Harvey. This notice prompted the United States and the State of Texas to file an enforcement action in September 2018, which covered an unspecified number of Clean Water Act and related Texas Water Code violations over ten years, and culminated in the draft consent decree on which Bayou City Waterkeeper offers these comments now.⁶ Bayou City Waterkeeper intervened in that enforcement action as a matter of right (and by the Court's order) under FRCP 24(a)(1) and also filed a citizen suit.⁷

Bayou City Waterkeeper's review showed, and the draft consent decree has confirmed, that no single source is responsible for Houston's wastewater problems.⁸ The City's self-reported data attributes overflows to a range of distinct, yet overlapping causes, like localized grease clogs leading to back-ups, heavy rainfall leading to high-volume overflows, faulty work, failing pumps, broken pipes, lack of electricity, untrained employees, and more. See Section IV below.

To illustrate, over the five-year period covered by Bayou City Waterkeeper's lawsuit, the 2,330 discharges associated with the 69th Street Wastewater Treatment Plant's wastewater permit were attributed to several unique, localized causes across that plant's network of infrastructure stretching across the city: heavy rain; broken pipes; grease, mud, or debris clogging a line; a collapse in a sewer line; a broken main; and loss of power. Further, while it is a misconception that rain alone causes the City's systems to overflow, rain is an important source of overflows that the City, and the consent

comments disclose facts or considerations that indicate that the consent is inappropriate, improper, inadequate, or inconsistent with [Texas law].").

⁵ Draft Consent Decree, seventh "Whereas" clause.

⁶ See *United States v. City of Houston*, No. 4:18-CV-3368 (S.D. Tex. filed September 20, 2018).

⁷ See *Bayou City Waterkeeper v. City of Houston*, No. 4:18-CV-3369 (S.D. Tex. filed September 21, 2018).

⁸ Draft Consent Decree, Appendix E. Bayou City Waterkeeper reviewed the City's self-reported data, which it obtained from the TCEQ through a series of public information requests.

decree, must address: over that same time period, across Houston, the City reported to the TCEQ that more than 15 million gallons of wastewater left the system untreated during periods of rain.⁹

Regardless of the source, the City's overflows have dramatically affected water quality across the region. Environment Texas' analysis of water quality data found fecal bacteria 75% of the time at local testing sites.¹⁰ Among Environment Texas' recommendations to improve water quality: More vigorously enforce municipal wastewater treatment standards.¹¹

Across Houston, lower income and minority communities are "most likely to feel the consequences of Houston's long-running struggle with sewer overflows."¹² In 2016, the Houston Chronicle reported:

The four dozen zip codes with above-average rates of raw sewage spills also have higher poverty rates and larger concentrations of Hispanic or black residents than the city as a whole, a trend that is even more pronounced in the 10 zip codes with the most spills since 2009, when officials say they began keeping reliable data.¹³

Houston is one of the last cities in the nation to have its sewer overflows addressed by the EPA. The EPA's National Compliance Initiative began in 2000 "to reduce pollution and to reduce unlawful discharges of raw sewage that degrade water quality in communities" emanating from municipal sewer systems.¹⁴ As of FY2019, the EPA had addressed 92% of large sanitary sewer systems before choosing to abandon the initiative.¹⁵ Houston was among the remaining 8% of municipal systems with wastewater violations that had not yet been addressed when the program was closed.¹⁶

The delay in resolving Houston's wastewater problems presents an opportunity for the City, EPA, and TCEQ: to learn from the more than 1,014 municipalities with large sewer systems, and 209 more with combined sewer systems, that have grappled with resolving their wastewater pollution through the National Compliance Initiative.¹⁷ Houston's consent decree must integrate the best practices of other municipalities and adapt those practices to its own circumstances: a dispersed wastewater system and population, increasingly heavy rain, historic inequities, and a longstanding failure to engage communities in large-scale infrastructure planning. The City must also use the consent decree to advance local investments in flood mitigation and the goals set by its climate, resilience, and green infrastructure planning.

⁹ Bayou City Waterkeeper's analysis of the data that the City reported to the TCEQ.

¹⁰ Environment Texas Research & Policy Center, Swim at Your Own Risk: Bacteria Pollution in Texas Beaches and Waterways Threatens Public Health (2018), available at https://environmenttexas.org/sites/environment/files/reports/TX_Water2018_scrn.pdf

¹¹ *Id.* at 19.

¹² Mike Morris, Sewer spills put city under EPA scrutiny, Houston Chronicle (Aug. 27, 2016), available at <https://www.houstonchronicle.com/news/houston-texas/houston/article/Sewer-spills-put-city-under-EPA-scrutiny-9188683.php>.

¹³ *Id.*

¹⁴ EPA, National Compliance Initiative: Keeping Raw Sewage and Contaminated Stormwater Out of Our Nation's Waters, <https://www.epa.gov/enforcement/national-compliance-initiative-keeping-raw-sewage-and-contaminated-stormwater-out-our> (last visited Sep. 18, 2019)

¹⁵ *Id.*

¹⁶ *Id.*

¹⁷ EPA, National Compliance Initiative: Keeping Raw Sewage and Contaminated Stormwater Out of Our Nation's Waters, <https://www.epa.gov/enforcement/national-compliance-initiative-keeping-raw-sewage-and-contaminated-stormwater-out-our> (last visited Sep. 18, 2019)

At the end of this consent decree, to comply with the Clean Water Act, Houston must intend to have zero overflows and discernibly improved water quality. To reach that goal, this letter recommends several additions to the consent decree:

- **BCWK's Role of Intervenor.** Bayou City Waterkeeper's notice of intent to sue prompted the enforcement action that led to this consent decree; moving forward, we will remain engaged as the City resolves wastewater problems over the consent decree's life. So we may confirm the City meets all targets and bring issues to the Court's attention if needed, the consent decree must recognize our role. **See Section III.**
- **Addressing Causes of SSOs.** To eliminate the City's ongoing legal violations, the consent decree must require action by the City to address the disparate causes of SSOs that have been reported. **See Section IV.**
- **Green Infrastructure & Wet Weather.** To tackle the City's substantial wet-weather SSOs, the consent decree must require planning for green infrastructure and require the City to take on pilot projects to determine how best to use green infrastructure to address SSOs. **See Section V.**
- **Equity & Environmental Justice.** The consent decree must address, and avoid compounding, historic inequities associated with Houston's wastewater problems by: planning and reporting on EJ issues; requiring Early Action Projects in EJ communities; requiring a rate study focused on low-income users most vulnerable to rate increases; and redirecting a portion of the \$4.4 million penalties into Supplemental Environmental Projects. **See Section VI.**
- **Resilience.** To anticipate and limit impacts from future storms like Harvey and Imelda moving forward, the consent decree must require the City to deliver on the promises of its Climate Action and Resilience Plans and integrate floodplain data, climate risk, and population projections into all wastewater infrastructure planning. **See Section VII.**
- **Community Engagement.** The consent decree must account for the City's failure to engage communities and require a plan for public engagement moving forward. Measures include the creation of a Community Wastewater Committee, holding an annual forum on the consent decree and publishing a related report, and better information sharing. **See Section VIII.**
- **Data Reporting & Public Information.** Data reporting must be designed to inform regulators and the public about the City's progress in complying with the consent decree, as well as to allow the City to quickly identify and address specific vulnerabilities in its infrastructure. **See Section IX.**
- **Cross-Project Coordination.** As the City, Harris County, and other governmental entities spend billions to recover from Harvey and make our region more resilient, the City's planning under the consent decree must maximize opportunities for shared coordination and costs. **See Section X.**

These recommended provisions are designed to make sure the City complies with the Clean Water Act and Texas Water Code over the long-term. This consent decree will stretch over four mayoral terms, which will represent a minimum of three different administrations, each of which will bring with it a different set of priorities. Given the City's decades-long failure to comply with the Clean Water Act and Texas Water Code, the provisions we recommend should not be left to the City's option or the preferences of any given administration.

II. Length of Comment Period & Need for Community Meetings

The Agencies' comment periods collectively represent the first and only real opportunity for the public to give any feedback to Houston's consent decree. We thank the DOJ for extending the federal comment period by 30 days. We ask for 30 more days so the Agencies—and barring the Agencies, Bayou City Waterkeeper—can hold public meetings in communities most affected by the City's wastewater problems and take comments from residents.

As explained in our September 10, 2019 letter to the DOJ, the lack of opportunities for public participation so far is unusual. Other local governments resolving wastewater issues through consent decrees contemplated more robust community engagement both before and after the consent decree was final. To illustrate, the DOJ is taking public comments now on the Allegheny County Sewer Authority's wastewater consent decree. In addition to giving the public [more than 60 days to comment](#), the proposed settlement requires implementation of a comprehensive plan for public participation over the life of the consent decree.

As the fourth largest city in the nation, Houston also has "[one of the largest separate sewer systems in the country](#)." Because Houston is so spread out, and both culturally and linguistically diverse, the City faces special challenges in engaging communities on a short timeline. Extending the comment period would allow the DOJ or EPA to hold public meetings, educate the public about the consent decree, and take oral comments from a wider range of Houston residents. Given Houston's size and dispersed population, these public meetings should be held across the city to maximize opportunities for participation.

Alternatively, if given additional time, Bayou City Waterkeeper will hold public meetings to obtain additional comments from the public. With the additional 30 days already given, Bayou City Waterkeeper was able to hold a community meeting in Acres Homes, a neighborhood with a high level of residential sewage backups. This kind of engagement will improve this comment process by giving the Agencies a ground-level view into the way the City's problems affect its residents. It also will enhance the City's ability to comply with the consent decree by increasing long-term opportunities for information-sharing.

If the Agencies refuse to extend the comment period further, we urge the Agencies to hold public meetings in Houston 30 days after the consent decree is final and explain their responses to the written comments submitted by the public during this comment period.

To offset the harm from minimal public engagement so far and promote public engagement moving forward, the consent decree also must incorporate the recommendations in Section XIII.

III. Bayou City Waterkeeper's Role as Intervenor

The only mention the consent decree makes of Bayou City Waterkeeper's role as plaintiff-intervenor is in the caption. Other consent decrees involving non-profit plaintiff-intervenors like Bayou City Waterkeeper comprehensively addressed the intervenors' role and resolved the intervenors' claims.¹⁸

If granted the right to intervene, Bayou City Waterkeeper represented to the Court that it would advance and protect its members' interests. Unlike other cases involving intervenors, the Agencies and City took the unusual approach of excluding Bayou City Waterkeeper from all settlement negotiations. This means Bayou City Waterkeeper was given no opportunity to suggest changes to the

¹⁸ See, e.g., St. Louis' Consent Decree (2013), <https://www.epa.gov/sites/production/files/2013-09/documents/stlouis-cd.pdf>.

consent decree, and as a result, several key provisions that would promote the public's interest over the life of this consent decree are missing.¹⁹ Through this comment letter, Bayou City Waterkeeper has made an effort to raise these issues so they may be addressed and incorporated before the consent decree is final and without the need for further litigation.

Provisions like the Clean Water Act's citizen participation section "reflect [a] deliberate choice by Congress to widen citizen access to the courts...."²⁰ This choice means that the Agencies, throughout this process, should treat citizen groups like Bayou City Waterkeeper not as "nuisances or troublemakers... but rather as welcomed participants in the vindication of environmental interests."²¹ The Fifth Circuit has frequently recognized that governmental plaintiffs and defendants, like those here, cannot adequately represent private intervenors like Bayou City Waterkeeper.²²

Though the Agencies and the City disregarded this case law by excluding Bayou City Waterkeeper so far, the Agencies can remedy this going forward. As an intervenor, Bayou City Waterkeeper may play an important role over the life of the consent decree that can complement and enhance the Agencies' primary enforcement roles. The consent decree can, and should, formalize this role.

At a minimum, Bayou City Waterkeeper should receive all reports, plans, and updates shared with the Agencies and be given the opportunity to participate in the dispute resolution process outlined under the consent decree. This will allow Bayou City Waterkeeper to confirm that the City meets all targets outlined under the consent decree and that the City's actions bring it into compliance with the Clean Water Act—and if necessary, bring any issues to the Court's attention. This recommendation is typical of consent decrees in cases involving intervenors.²³

For the consent decree to properly address Bayou City Waterkeeper's role in the litigation, we recommend the following changes:

Page or ¶	Current language	Proposed language (in bold) <i>[Explanatory text in bracketed italics]</i>
p. 1	None	<i>[This should be the third "WHEREAS" statement.]</i> WHEREAS, Plaintiff-Intervenor Bayou City Waterkeeper ("BCWK") filed a motion to intervene, and when its motion was granted by the Court on November 18,

¹⁹ Taking the time to consult directly with communities most affected by the City's wastewater problems undoubtedly would maximize opportunities for the Agencies to protect the public's interests through this consent decree.

²⁰ *Friends of the Earth v. Carey*, 535 F.2d 165, 172 (2d Cir. 1976) (discussing the Clean Air Act's citizen suit provision, which parallels the Clean Water Act's provision).

²¹ *Id.*

²² *Entergy Gulf States La. v. EPA*, 817 F.3d 198, 206 (5th Cir. 2016) (allowing intervention because conservation groups' interests sufficiently diverged from EPA's); *Heaton v. Monogram Credit Card Bank*, 297 F.3d 416, 425 (5th Cir. 2002) (finding inadequate representation by government agency because the government represents a broader interest than that of a private entity); *Doe #1 v. Glickman*, 256 F.3d 371, 381 (5th Cir. 2001) (same); see also *Forest Conservation Council v. U.S. Forest Serv.*, 66 F.3d 1489, 1498-99 (9th Cir. 1995) (reasoning that government defendant could not be expected to make all the arguments of proposed intervenors).

²³ For an example, review St. Louis's consent decree.

<https://www.epa.gov/sites/production/files/2013-09/documents/stlouis-cd.pdf>

		2018, filed its Complaint in Intervention against the City for its alleged violations of Sections 301(a) and 402 of the CWA, 33 U.S.C. §§ 1311(a) and 1342, and certain TPDES Permits, following its issuance on July 23, 2018 of a 60-day notice of intent to sue pursuant to Section 505 of the CWA, 33 U.S.C. § 1365.
¶ 9	None	<i>[This should be added as a definition.]</i> “BCWK” shall refer to Bayou City Waterkeeper, the plaintiff-intervenor in this action.
¶ 9(aa)	“Parties” shall mean the United States of America, on behalf of EPA, the State of Texas, on behalf of the TCEQ, and the City.	“Parties” shall mean the United States of America, on behalf of EPA, the State of Texas, on behalf of the TCEQ, BCWK , and the City.
¶ 12	...Within two years of the Effective Date, the City... shall submit a Capacity Remedial Measures Plan(s) to EPA for its review and approval, with a copy to TCEQ....	...Within two years of the Effective Date, the City... shall submit a Capacity Remedial Measures Plan(s) to EPA for its review and approval, with copies to TCEQ and BCWK ... ²⁴
¶ 13	...In the Annual Reports submitted to EPA for review and comment, with a copy to TCEQ, the City shall... identify the locations that meet the criteria specified above, identify areas with capacity constraints, provide remedial alternative analysis for each area in the Capacity Remedial Summary, specify the remedial action taken or to be taken, along with a timeline for completion of each remedial action.	...In the Annual Reports submitted to EPA for review and comment, with copies to TCEQ and BCWK , the City shall identify the locations that meet the criteria specified above, identify areas with capacity constraints, provide remedial alternative analysis for each area in the Capacity Remedial Summary, specify the remedial action taken or to be taken, along with a timeline for completion of each remedial action.
¶ 21(a)	Scott Street WWF. No later than four years and six months from the Effective Date the City shall submit to EPA and to TCEQ, for review and approval, a Remedial Measures Plan...	Scott Street WWF. No later than four years and six months from the Effective Date the City shall submit to EPA and to TCEQ, for review and approval, with a copy to BCWK , a Remedial Measures Plan...
¶ 21(b)	Northside WWF. No later than six years and six months from the Effective Date, the City shall submit to EPA and TCEQ, for review	Northside WWF. No later than six years and six months from the Effective Date, the City shall submit to EPA and TCEQ, for review and

²⁴ This same approach was taken in St. Louis’ 2013 consent decree. See St. Louis Consent Decree at ¶¶ 9, 11, 23, 30(a), 31, 34, 39, 42, 43, 45, 46, 55(c), 60, 61(a), 62, 72, 73, 84, 109, <https://www.epa.gov/sites/production/files/2013-09/documents/stlouis-cd.pdf>

	and approval, a Remedial Measures Plan...	approval, with a copy to BCWK , a Remedial Measures Plan...
¶ 23	WWF Full-Scale Treatment Plan... the City shall, no later than six months after EPA's response, submit a plan to EPA and TCEQ, for review and approval, indicating how full implementation will occur and providing justification for the proposed implementation schedules.	WWF Full-Scale Treatment Plan... the City shall, no later than six months after EPA's response, submit a plan to EPA and TCEQ, for review and approval, with a copy to BCWK , indicating how full implementation will occur and providing justification for the proposed implementation schedules.
¶ 24(b)	Scott Street WWF. No later than seven years from the Effective Date, the City shall submit to EPA, with a copy to TCEQ, for EPA review and approval, a Remedial Measures Plan, including a proposed schedule to eliminate discharges from the Scott Street WWF...	Scott Street WWF. No later than seven years from the Effective Date, the City shall submit to EPA, with copies to TCEQ and BCWK , for EPA review and approval, a Remedial Measures Plan, including a proposed schedule to eliminate discharges from the Scott Street WWF...
¶ 24(c)	Northside WWF. No later than 10 years from the Effective Date, the City shall submit to EPA, with a copy to TCEQ, for EPA review and approval, a Remedial Measures Plan, including a proposed schedule to eliminate discharges from the Northside WWF....	Northside WWF. No later than 10 years from the Effective Date, the City shall submit to EPA, with copies to TCEQ and BCWK , for EPA review and approval, a Remedial Measures Plan, including a proposed schedule to eliminate discharges from the Northside WWF....
¶ 43	...This CMOM Program Plan shall be submitted to EPA, with a copy to TCEQ, for EPA review and approval, within one and a half years of the Effective Date....	...This CMOM Program Plan shall be submitted to EPA, with copies to TCEQ and BCWK , for EPA review and approval, within one and a half years of the Effective Date....
¶ 45	...If substantial updates to SOPs are made, the City shall submit, electronically or otherwise, such updated SOPs to EPA, with a copy to TCEQ, as part of the Annual Report....	...If substantial updates to SOPs are made, the City shall submit, electronically or otherwise, such updated SOPs to EPA, with copies to TCEQ and BCWK , as part of the Annual Report....
¶ 58	<u>Deliverables for Which EPA Provides Written Comments.</u> EPA may choose to provide written comments on the Deliverables subject to Paragraph 55....	<u>Deliverables for Which EPA Provides Written Comments.</u> EPA may choose to provide written comments on the Deliverables subject to Paragraph 55.... BCWK shall receive a copy of the EPA's written comments and may provide a written response within 60 days of receipt.
¶ 62	...On October 31 following each Fiscal Year over the term of this Consent Decree, and until this Consent Decree is terminated, the City shall submit to EPA, with a copy to TCEQ, an Annual Report....	...On October 31 following each Fiscal Year over the term of this Consent Decree, and until this Consent Decree is terminated, the City shall submit to EPA, with copies to TCEQ and BCWK , an Annual Report....
¶ 100	Any dispute subject to Dispute Resolution	Any dispute subject to Dispute Resolution under

	under this Consent Decree shall first be the subject of informal negotiations. The dispute shall be considered to have arisen when the City sends the United States and Texas a written notice of dispute...The period of informal negotiations shall not exceed 45 Days from the date the City sends its notice of dispute, unless that period is modified by written agreement between the Plaintiffs and the City....	this Consent Decree shall first be the subject of informal negotiations. The dispute shall be considered to have arisen when the City or BCWK sends the United States and Texas a written notice of dispute...The period of informal negotiations shall not exceed 45 Days from the date the City or BCWK sends its notice of dispute, unless that period is modified by written agreement between the Parties
¶ 101	The City shall invoke formal dispute resolution procedures... by serving on Plaintiffs a written statement of position regarding the matter in dispute. The statement of position shall include any factual data, analysis, or opinion supporting the City's position and any supporting documentation relied upon by it....	The City or BCWK shall invoke formal dispute resolution procedures... by serving on Plaintiffs a written statement of position regarding the matter in dispute. The statement of position shall include any factual data, analysis, or opinion supporting the City's or BCWK's position and any supporting documentation relied upon by it....
¶ 102	The City may seek judicial review of the dispute... The motion shall contain a written statement of the City's position on the matter in dispute... Plaintiffs shall respond to the City's motion as follows...	The City or BCWK may seek judicial review of the dispute... The motion shall contain a written statement of the City's or BCWK's position on the matter in dispute... Plaintiffs shall respond to the City's motion as follows...
¶ 102(a)	With respect to disputes regarding force majeure under Section XI (Force Majeure)... and termination under Section XXII (Termination), Plaintiffs shall file their response to the City's motion within the time period allowed by the Local Rules of this Court....	With respect to disputes regarding force majeure under Section XI (Force Majeure)... and termination under Section XXII (Termination), Plaintiffs shall file their response to the City's motion within the time period allowed by the Local Rules of this Court. BCWK may also file a response within the same time period....
¶ 102(b)(i)	If Plaintiffs reach a joint position, Plaintiffs shall file a joint response to the City's motion within the time period allowed by the Local Rules of this Court. The City may file a reply memorandum, to the extent permitted by the Local Rules or order of the Court.	If Plaintiffs reach a joint position, Plaintiffs shall file a joint response to the City's motion within the time period allowed by the Local Rules of this Court. BCWK may also file a response within the same time period. The City may file a reply memorandum, to the extent permitted by the Local Rules or order of the Court.
¶ 102(b)(ii)	If Plaintiffs do not reach a joint position, each Plaintiff shall file a response to the City's motion within the time period allowed by the Local Rules of this Court. The City may file a reply memorandum, to the extent permitted by the Local Rules or order of the Court.	If Plaintiffs do not reach a joint position, each Plaintiff shall file a response to the City's motion within the time period allowed by the Local Rules of this Court. BCWK may also file a response within the same time period. The City may file a reply memorandum, to the extent permitted by the Local Rules or order of the Court.
¶ 102(c)	...The United States shall file its response to the City's motion within the time period	...The United States shall file its response to the City's motion within the time period allowed by

	allowed by the Local Rules of this Court. The City may file a reply memorandum, to the extent permitted by the Local Rules or order of the Court.	the Local Rules of this Court. BCWK may also file a response within the same time period. The City may file a reply memorandum, to the extent permitted by the Local Rules or order of the Court.
¶ 122	The Parties shall each bear their own costs of litigation of this action, including attorneys' fees, except that Texas may collect its Attorney's fees as set forth in Section VII of this Consent Decree, and Plaintiffs shall be entitled to collect the costs (including attorneys' fees) incurred in any action necessary to collect any portion of the civil penalties or stipulated penalties due but not paid by the City.	The Parties shall each bear their own costs of litigation of this action, including attorneys' fees, except that Texas may collect its Attorney's fees as set forth in Section VII of this Consent Decree, and Plaintiffs shall be entitled to collect the costs (including attorneys' fees) incurred in any action necessary to collect any portion of the civil penalties or stipulated penalties due but not paid by the City. BCWK reserves its right to seek attorney's fees and costs under the CWA.
¶ 123	"Unless otherwise specified herein, whenever notifications, submissions, or communications are required by this Consent Decree, they shall be made in writing and addressed as follows:..."	<i>[Add to list]</i> "Unless otherwise specified herein, whenever notifications, submissions, or communications are required by this Consent Decree, they shall be made in writing and addressed as follows:..." <u>To Bayou City Waterkeeper:</u> Executive Director Bayou City Waterkeeper 2010 N Loop W #103 Houston, TX 77018
¶ 126	If the City annexes new assets into its WCTS during the term of the Consent Decree, it shall provide written notice to EPA and TCEQ under this Section within 45 Days. The Parties shall meet and confer within 45 Days to discuss and resolve all issues raised by the Parties related to annexation.	If the City annexes new assets into its WCTS during the term of the Consent Decree, it shall provide written notice to EPA, and TCEQ, and BCWK under this Section within 45 Days. The Parties shall meet and confer within 45 Days to discuss and resolve all issues raised by the Parties related to annexation.
¶ 131(c)	...The City may reprioritize Work Projects...provided such determination is provided to EPA in writing and submitted to EPA for review and approval at the time any change under this Paragraph is requested.	...The City may reprioritize Work Projects... provided such determination is provided to EPA in writing and submitted to EPA for review and approval, with a copy to BCWK , at the time any change under this Paragraph is requested.

IV. Addressing and Monitoring Causes of SSOs

The Agencies may resolve the City's Clean Water Act violations through a consent decree that is fair, adequate, and reasonable, as well as consistent with the public interest, and which "further[s] the objectives of the law upon which the complaint was based."²⁵ For the reasons described in this section, the consent decree falls short of this standard.

1. Data purporting to support consent decree is incomplete

The consent decree directs the City to "address the effluent limit exceedances from the WWTPs specified in Appendix E." This Appendix, however, does not address the full range of overflows and discharges raised in either Bayou City Waterkeeper's citizen suit or the Agencies' enforcement action, which purports to cover violations since at least August 2005. *See, e.g.*, Complaint at ¶ 50, *et seq.* It is unclear from the face of the consent decree how it addresses exceedances not listed in this Appendix that are the subject of the underlying litigation.

In responding to these comments, the Agencies must account for these deficiencies and explain how the consent decree addresses the full scope of violations raised in Bayou City Waterkeeper's citizen suit and the Agencies' enforcement action. If any known sources of pollution will not be addressed through the consent decree, the Agencies must explain why, and explain how the consent decree will nevertheless further the objectives of the Clean Water Act and be consistent with the public interest.

If the Agencies cannot do this, we urge them to withhold their consent until the consent decree is modified to address the full scope of legal violations underlying this draft settlement. *See* Draft Consent Decree, ¶ 138; Texas Water Code § 7.110(c).

2. More information is needed about the prioritization of projects, and the consent decree should require additional factors to be used in prioritization

It is unclear how the prioritization framework in Appendix D governed the selection of projects required by the draft consent decree. In responding to these comments, the Agencies should explain why the factors listed were selected and the role each factor played in project selection. The Agencies should also explain if a facility meeting a given criterion (e.g., "flood zone") must be altered on an expedited basis or at all, or if any given criterion is regarded as one factor of many that may, or may not, result in a project being prioritized or undertaken. Further, the Agencies should explain if the prioritization framework resulted in any projects being altogether excluded from the Early Action list.

Further, for projects selected, while Appendix D lists "scoring criteria," the consent decree does not list what score projects received under this framework or otherwise explain the reasoning behind the selection and prioritization of projects. The Agencies should update this Appendix to list the projects' scores or otherwise explain the reasoning behind the selection and prioritization of projects.

Further, with respect to floodplain terminology, the consent decree does not state what metric is being used to determine the 100-year floodplain and 500-year floodplain used in the prioritization framework. The Agencies should explain how these criteria were defined. To future-proof Houston's wastewater system, the consent decree must explicitly require the City must be required to use the best, latest floodplain data in its planning and prioritization. This data necessarily will evolve over the life of the

²⁵ *Frew v. Hawkins*, 540 U.S. 431, 437 (2004).

consent decree. At a minimum, any updates to the NOAA floodplain maps, including any state or federal agency supplements to that data that expand the floodplain, should be applied throughout the consent decree's 15-year timeline.

As discussed in Section VI, the City's aging wastewater infrastructure has disproportionately affected lower-income communities of color. The impacts on these communities must be included as a factor in prioritization, and the order of projects must be adjusted to account for the inclusion of this factor.

The Agencies must also explain whether this prioritization framework resulted in any projects being excluded and why other projects, including any projects to address problems at the WWTPs themselves, were not included.

3. Early Action Projects must be completed on a quicker timeline than ten years

Several of the Early Action Projects have deadlines for completion in 2028, 2029, and 2030. There is nothing "early" about deadlines nine to eleven years into the future. By delaying repairs so far into the future, the draft consent decree undermines the likelihood that the City will be in compliance with the Clean Water Act by the end of its term. In responding to these comments, we ask the Agencies to justify any compliance terms for Early Action Projects that are longer than two years.

4. The length for compliance under the consent decree is too long

The State of Texas regulates the City's wastewater treatment and collection systems through the Texas Pollutant Discharge Elimination System ("TPDES") program, by which the State has assumed federal regulatory authority over the discharge of pollutants under the Clean Water Act. Under its memorandum of agreement with the federal government, the TCEQ "has the primary responsibility to establish the TPDES program priorities, so long as they are consistent with Clean Water Act and NPDES goals and objectives."²⁶ The Clean Water Act and NPDES program set clear goals: eliminate discharges of pollutants into water and "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." See 33 U.S.C. § 1251.

The City spent more than \$3 billion over 30 years on its wastewater infrastructure. It still is not complying with the Clean Water Act. The Agencies based their enforcement action on the City's failure to comply with the Clean Water Act and Texas Water Code since at least August 2005—nearly 15 years. By setting a long compliance period, the consent decree will allow the City to continue to discharge effluent into area waters for yet another 15 years. At the end of the consent decree, the City will have been out of compliance for up to 45 years—longer than the average Houstonian has been alive. This is unacceptable.

The deadlines set under the consent decree will determine water quality in Houston's bayous and Galveston Bay for at least the next 15 years. Without further justification, the current 15-year timeline for compliance is too long to fulfill the goals of the Clean Water Act and TPDES program. To compare, deadlines for the recent Metropolitan St. Louis Sewer District's consent decree began as quickly as

²⁶ Memorandum of Agreement Between the Texas Natural Resource Conservation Commission and the US EPA, Region 6 Concerning the National Pollutant Discharge Elimination System (Sep. 14, 1998), available at <https://www.tceq.texas.gov/assets/public/permitting/waterquality/attachments/municipal/c1.pdf>

one month for the system characterization report; every consent decree requirement had to be met within two years of the effective date.²⁷

In responding to these comments, we ask the Agencies to justify any consent decree compliance term longer than five years.

5. The draft consent decree does not fully address known sources of pollution

Appendix E of the draft consent decree reveals clear patterns in the reported reasons for effluent violations across different treatment facilities. The draft consent decree does not address many of these causes. The principal causes of reported violations, and our recommendations for addressing them, are:

Reported Cause	Bayou City Waterkeeper's Comments/Recommendations
Weather conditions, rainfall, thunderstorms, and associated hydraulic surges through the plant from infiltration and inflow. Hydraulic surges resulting in incomplete disinfections.	See "Green Infrastructure & Wet Weather" section immediately below.
Equipment failures, malfunctions, tripped pumps, lost prime on pumps, tripped blowers and broken equipment: chlorination feeds, return sludge pumps, broken diffuser heads, alarm system, clarifiers; blowers, clarifier skimmer arm, onsite oxygen plant, pre-analyzer pump, bleach feed analyzer, dryers, filtration systems, hydraulic value systems. Problems are sometimes associated with high ambient temperatures and/or fouled aeration basin diffusers; air leaking out of an empty basin, air leaks.	Equipment failures are inevitable, but associated effluent violations are not. Solutions include more frequent and comprehensive maintenance, staff training, an on-site inventory of equipment replacement and parts, and information regarding where remaining critical spare parts can be secured to minimize repair or replacement times. ²⁸
Clogged, fouled, and debris-plugged equipment: sludge return telescopes, return lines, clarifiers, center wells, rags on UV bulbs, aeration basin diffusers, air flow restrictions on old air filters	Clogged, fouled and debris-plugged equipment can be eliminated by specifying regular maintenance requirements at short implementation intervals. Essential components like air filters can be replaced on a regular schedule before failure or earlier within their lifecycle. Review the treatment train for opportunities for earlier debris and grit screening. Rag interference with UV bulbs, typically a final treatment step, raises questions

²⁷ <https://www.epa.gov/sites/production/files/2013-09/documents/stlouis-cd.pdf>

²⁸ See, e.g., requirements associated with the City of Atlanta's Maintenance Management System in Atlanta's First Amended Consent Decree, at p.14-16, available at <https://www.epa.gov/sites/production/files/documents/atlanta1999-cd.pdf>

	about the efficacy of the entire treatment train.
Lift station failures: pump failures, unprimed pumps surges when pumps are restarted or re-primed. Septic influent into treatment streams when lift stations are brought back online following extended outages	Numerous problems are associated with lift station pump failure. Lift station solutions could include preventive maintenance, SCADA monitoring and control, 24/7 staff monitoring, wet well high- and low-level alarms, malfunction alarms and automatic dialers, backup power supply, and pump redundancy. ²⁹
Key equipment out of service for maintenance: air lift pump stations, blowers	Service requirements should not result in effluent violations. The Consent Decree should require procedures to maintain treatment capacity during equipment out-of-service periods adequate to achieve permit compliance for predicted influent flows during rain events up to the 5-year, 24-hour amount of 6.94 inches.
Inadequate staffing and routine maintenance: aeration blowers off and not identified until the morning shift arrives; preventive maintenance discovering that 72 UV lights are burned out. Communication failure: control center failing to notify operator on time.	Staffing and maintenance specifications requiring 24/7 staffing, preventative maintenance schedule and procedures for all equipment and processes designed to rehabilitate or replace equipment prior to failure. Specification of maintenance staff training and education requirements. A communication plan between staffed pump stations and treatment facilities, field crews and supervising staff. ³⁰
Planned sludge over-wasting anticipating wet-weather flow surges.	Sludge wasting plans and procedures to maintain adequate capacity for wet-weather flow surges without violating effluent limits.
Equipment problems that persist for more than four months, despite records of numerous work orders for repair.	Improve equipment repair and maintenance procedures to maintain permit compliance for predicted influent flows during rain events up to the 5-year, 24-hour amount of 6.94 inches.
Power failures, electrical problems, and power surges at lift stations, return flow stations, disinfection systems, and entire treatment plants for up to 10 hours. Simultaneous failures: multiple return activated sludge pumps.	Back-up power sources at treatment facilities and pump stations. Procedures to ensure that equipment or power failures during abnormal or emergency conditions are corrected as quickly as possible to limit facility downtime.
Copper and zinc toxicity, with copper toxicity possibly associated with the use of an algacide. Corrective action described as raising copper limits in the permit.	Eliminate algacides using copper or other toxic metals. Do not modify permits to raise limits because that would violate the anti-backtracking rule.
Potential violations occurring when equipment is	Plan for back-up equipment so no violations occur

²⁹ See *id.*³⁰ See *id.*

out of service for repair: clarifiers, aeration blowers, aeration mixers, grit/debris removal. Associated problems when failure occurs in limited available process trains.	when routine repairs are needed.
Contractor error. On-going contractor activities that require all blowers to be turned off.	Improve contractor training. Require contractor bonding against errors. Require contractor schedules showing dates that equipment will be removed from and returned to service. Require work plans that provide for routing wastewater to alternative treatment trains during the period that a unit is out of service. Schedule contractor activities so that treatment capacity remains available to achieve permit compliance for predicted influent flows during rain events up to the 5-year, 24-hour amount of 6.94 inches.
Elevated influent BOD loading from Anheuser Busch.	Implement fines and penalties for business like Anheuser Busch, whose sewage results in a permit violation.

The consent decree must incorporate specific terms that address the underlying causes of the City's wastewater treatment violations. At a minimum, we recommend that the consent decree incorporate similar protective measures as those found in Sections VII and VIII of the City of Atlanta's First Amended Consent Decree, which includes detailed wastewater treatment facility maintenance, operations, safety, and staff training program requirements.³¹ Similar requirements in Houston's draft consent decree would directly address many of these documented treatment system failures. Given the City's failure to comply with the Clean Water Act for years (if not decades), specific, clear measures are needed to drive the City into compliance.

6. The consent decree does not adequately address FOGs and SSOs from private laterals, which are a major source of SSOs, particularly in low-income neighborhoods of color

The City has identified fats, oils, and grease as a major cause of SSOs. This cause contributes to many of the reported SSOs in low-income communities of color and often occur as a result of a blockage in a private lateral sewer line. To illustrate, in 2015 alone, the City reported more than 1500 discharges related to private cleanouts or service lines. To address these SSOs among residential users, the draft consent decree simply requires the City to continue educational efforts, tell residential homeowners to call a plumber, and conduct a follow-up inspection. If the homeowner does not address the problem, the City "may pursue any of its enforcement options allowed by law."³²

By merely requiring the City to tell homeowners to call a plumber and selectively resort to enforcement against homeowners who lack adequate financial resources, the draft consent decree does not adequately account for a major source of water pollution. Paragraph 43 of the draft consent decree must be amended to include a new subparagraph I to require the City to develop a plan for providing

³¹ See *id.*

³² Draft Consent Decree ¶ 43(g)-(k).

financial assistance to repair private laterals. The Houston-Galveston Area Council has gathered examples of municipalities that have implemented similar programs.³³

After the City has completed this analysis, the Agencies should allow the City to redirect penalties into a SEP to offset costs associated with this financial assistance program. See Section VI-4 below.

7. The penalties assessed are insufficient to deter future noncompliance

In Bayou City Waterkeeper's lawsuit, we identified more than 9,300 overflows and discharges which we contend violate the Clean Water Act. The Agencies' enforcement action purports to be broader in scope.

The applicable penalty under the Clean Water Act varies by the year of the underlying violation. For the time period covered by Bayou City Waterkeeper's intervention and citizen suit, penalties ranged from \$37,500 to \$53,484 per day, per violation. For illustrative purposes, based on Bayou City Waterkeeper's lawsuit alone, we would expect the City to be liable for hundreds of millions of dollars in penalties. The consent decree requires the City to pay the federal and state governments only \$4.4 million in penalties.³⁴

Under the Clean Water Act, penalties are mandatory.³⁵ "In determining the amount of a civil penalty the court shall consider the seriousness of the violation or violations, the economic benefit (if any) resulting from the violation, any history of such violations, any good-faith efforts to comply with the applicable requirements, the economic impact of the penalty on the violator, and such other matters as justice may require." EPA's policy emphasizes that the agency "seeks substantial penalties in order to deter noncompliance. Penalties promote environmental compliance and help protect public health by deterring future violations by the same violator and other members of the regulated community. ... Thus, any mitigation of penalties must be carefully considered."³⁶

In responding to these comments, the Agencies must explain why they did not seek substantial penalties in these circumstances, particularly in light of the City's long-time noncompliance with the Clean Water Act, the City's failure to resolve violations through past settlements with the Agencies, and the consent decree's lack of provision for Supplemental Environmental Projects.

8. Financial reasons cannot justify delays or inadequate remedial measures

Financial reasons cannot justify extending time frames for compliance with the Clean Water Act and Texas Water Code. The consent decree may provide for—and/or the City may explore—other ways to address cost concerns over the long-term, including progressive sewer rates, the implementation of energy-saving technology, and applying for financial assistance to offset costs associated with resilience-related measures and wet-weather improvements. For example, the Texas Water

³³ H-GAC, BIG Sanitary Sewer Systems Workgroup, <http://www.h-gac.com/bacteria-implementation-group/workgroups/wastewater-sanitary-sewer-systems.aspx>

³⁴ Draft Consent Decree, ¶ 47.

³⁵ 33 U.S.C. § 1319(d).

³⁶ EPA, Issuance of the 2015 Update to the 1998 U.S. Environmental Protection Agency Supplemental Environmental Projects Policy, at 21 (Mar. 10, 2015), <https://www.epa.gov/sites/production/files/2015-04/documents/sepupdatedpolicy15.pdf>.

Development Board loaned the City of Austin \$53 million for wastewater system improvements.³⁷ In 2015, DC Water issued the first Environmental Impact Bond to finance the construction of green infrastructure for Rock Creek sewer shed as part of its \$2.6 billion DC Clean Rivers Project.³⁸

Projects like the North Canal flood project, which reportedly will receive \$46 million from FEMA to address flooding at White Oak Bayou and Buffalo Bayou, a site of frequent overflows, present opportunities to improve wastewater infrastructure.³⁹ See Section X. The consent decree must make sure these opportunities are not missed.

Also, by improving community engagement relating to wastewater infrastructure, the City can more realistically set residents' expectations about any needed rate increases and engage the public in finding solutions to offsetting rate increases.

V. Green Infrastructure & Wet Weather

1. Houston's wet weather increases SSOs across the City's wastewater facilities

Wet weather influences and exacerbates the City's wastewater problems. See Draft Consent Decree, Appendix E. From 2013-2018, excluding Harvey, the City reported that more than 15 million gallons of wastewater left the system untreated when it rained.⁴⁰ While we might expect once-in-a-generation storms to disrupt the functionality of Houston's wastewater infrastructure, the City has reported effluent standard violations for pathogen indicators, ammonia, biochemical oxygen demand, and total suspended solids after even less than a half-inch of rain.

From 1/1/16 to 12/31/17, IAH's weather station reported 68 days with at least a half-inch of rain.⁴¹ If the City's wastewater collection and treatment system ("WCTS") is vulnerable to rain amounts this low, wastewater permit violations could be expected to occur, on average, every 11 days. Indeed:

- From February 2016 to August 2017 (excluding Harvey), WCTS associated with 69th Street WWTP spilled more than 5.1 million gallons of untreated wastewater during 78 separate rain events
- From March 2016 to January 2017, WCTS associated with Sims Bayou WWTP spilled more than 200,000 gallons of untreated wastewater during 21 separate rain events
- From March 2016 to August 2016, WCTS associated with Almeda Sims WWTP spilled more than 50,000 gallons of untreated wastewater during 11 separate rain events.

These repeated events diminish water quality, pose a risk to public health, and must be addressed.

³⁷ Press Release, Texas Water Development Board approves \$120,830,000 to the City of Austin (Travis, Williamson and Hays counties) for water and wastewater system improvements (Oct. 3, 2019), http://www.twdb.texas.gov/newsmedia/press_releases/2019/10/austin.asp

³⁸ Julie King, Considering Bonds To Fund Green And Hybrid Infrastructure (Oct. 8, 2019), <https://www.wateronline.com/doc/considering-bonds-to-fund-green-and-hybrid-infrastructure-0001>

³⁹ Zach Despart & Jasper Scherer, FEMA approves initial funding for long-sought North Canal flood project, Houston Chronicle (Oct. 11, 2019), <https://www.houstonchronicle.com/news/houston-texas/houston/article/FEMA-approves-initial-funding-for-long-sought-14515615.php>

⁴⁰ Bayou City Waterkeeper's analysis of the data that the City reported to the TCEQ.

⁴¹ See data collected at IAH by the National Oceanic & Atmospheric Administration here: <https://www.ncdc.noaa.gov/cdo-web/datasets/GHCND/stations/GHCND:USW00012960/detail>

2. Green infrastructure reduces the harms associated with wet-weather SSOs

While green infrastructure projects have more frequently been used to address combined sewer overflows, the EPA has recognized that green infrastructure may offer similar benefits to sanitary sewer systems.⁴² According to the City's own report, green infrastructure may "reduce drainage system costs... improve neighborhood resilience, reduce drainage concerns, ...and improve public health."⁴³ Overall, green infrastructure is one of the most efficient and cost-effective means of addressing pollutant infiltration and volume overflow that arise from wet-weather SSOs and may complement use of gray infrastructure across a wastewater system.

Given these benefits, the consent decree must expressly allow green infrastructure to address wet weather-related SSOs. At a minimum, the consent decree must require the City to study how green infrastructure may address sites of frequent SSOs, and require the Houston Public Works Department to submit a green infrastructure plan to the EPA and to the public. A green infrastructure plan focusing on sanitary sewer infrastructure would provide the opportunity to better understand the benefits of green infrastructure and identify pilot projects that work effectively with Houston's landscape.

The City of Milwaukee's green infrastructure planning over the last six years offers a model for the City to consider in its green infrastructure study under the consent decree.⁴⁴

3. Green infrastructure aligns with the City's broader development goals

Citing green infrastructure's myriad benefits to the public, individuals, and developers, the City's *Incentives for Green Development* recommends economically incentivizing developers to incorporate green infrastructure into construction projects, including rain gardens, green roofs, permeable pavement, rainwater harvesting, soil amendments, urban forestry, and bioswales.⁴⁵ Each type of green infrastructure lists "Improves stormwater management" as its first public benefit.⁴⁶

The City's draft outline Resilience Plan also contemplates several actions relating to green infrastructure, all of which potentially implicate the City's efforts to meet the goals of the consent decree.⁴⁷

- Action 7: Prepare Houston's workforce and all young Houstonians for the jobs of the future...
 - Sub-action 7.3: Train and develop a green infrastructure workforce
- Action 21: Make Houston neighborhoods more green...
 - Sub-action 21.1: Make equitable Green Infrastructure investments
- Action 36: Integrate green infrastructure into Houston's built environment
 - Sub-action 36.1: Lead by example on green infrastructure
 - Sub-action 36.2: Apply a resilient quotient to Green Stormwater Infrastructure projects

⁴² *Green Infrastructure Permitting and Enforcement Series: Factsheet 3, Sanitary Sewer Overflows*, EPA 5, <https://www.epa.gov/sites/production/files/2015-10/documents/epa-green-infrastructure-factsheet-3-080612.pdf>.

⁴³ *Id.* at 5.

⁴⁴ Milwaukee Metropolitan Sewerage District, *Regional Green Infrastructure Plan* (June 2013), available at https://www.mmsd.com/static/MMSDGIP_Final.pdf.

⁴⁵ *Houston Incentives*, at 8-15.

⁴⁶ *Id.*

⁴⁷ *Resilient Houston, Draft Outline for Feedback Purposes: September 10, 2019 to October 1, 2019*, <https://www.houstontx.gov/mayor/Resilient-Houston-Draft-Outline-20190910.pdf>

- Sub-action 36.3: Create a comprehensive nature-based solutions program
- Sub-action 36.4: Develop nature-based solutions pilot program...
- Action 40: Continue to implement the Houston Complete Streets and Transportation Plan (HCSTP)...
 - Sub-action 40.3: Update HCSTP to incorporate green infrastructure priorities

4. Green infrastructure offers benefits beyond mitigating SSOs

As both the City and EPA have documented, green infrastructure has benefits beyond reducing sewer overflows by managing stormwater:⁴⁸ it mitigates flooding, increases community resilience, improves water quality, reduces the urban heat island effect, improves habitat and conditions for native flora and fauna, and beautifies public spaces.⁴⁹

While the scope of the consent decree is limited to addressing the City's SSO problem, identifying multifaceted solutions is important; the City has a limited budget and must address a range of other related obligations, including recovering from Harvey and Imelda, fulfilling the goals of its climate and resilience planning, and meeting other obligations under federal and state environmental law. With those considerations in mind, the Agencies should strongly consider the additional benefits of green infrastructure projects in determining whether and where to include them in this consent decree.

5. Green infrastructure projects are present in many similar consent decrees, are encouraged by the EPA, and have been historically successful and cost-effective

The EPA historically has encouraged the implementation of green infrastructure, including in cities with sanitary sewer systems like Houston.⁵⁰ Three examples are the government's consent decrees with the Louisville and Jefferson County Metropolitan Sewer District in 2009, Kansas City in 2010, and the City of Chicago in 2011. The Milwaukee Sewerage District's green infrastructure planning over the last decade also offers an excellent model for the City to consider.⁵¹ The EPA also has compiled a list of examples of Clean Water Act enforcement cases that include green infrastructure.⁵²

a. Louisville and Jefferson County Metropolitan Sewer District

In its 2009 amended consent decree, Louisville's Metropolitan Sewer District ("MSD") was given six years period to study how green infrastructure might address its combined and sanitary sewer overflows, which has since resulted in the implementation of over 100 projects.⁵³ Projects range from downspout

⁴⁸ *Id.*; *What is Green Infrastructure?*, EPA <https://www.epa.gov/green-infrastructure/what-green-infrastructure> (all electronic sources last visited Oct. 1, 2019).

⁴⁹ *Id.*

⁵⁰ *Green Infrastructure Permitting and Enforcement Series: Factsheet 3, Sanitary Sewer Overflows*, EPA 5, <https://www.epa.gov/sites/production/files/2015-10/documents/epa-green-infrastructure-factsheet-3-080612.pdf>.

⁵¹ See Milwaukee Metropolitan Sewerage District, *Regional Green Infrastructure Plan* (June 2013), available at https://www.mmsd.com/static/MMSDGIP_Final.pdf; City of Milwaukee *Green Infrastructure Plan* (June 2019), available at https://city.milwaukee.gov/ImageLibrary/WCC/Images/GreenLots/FINALGIPLAN--reduced_2.pdf.

⁵² *Enforcement: Examples of settled Clean Water Act enforcement cases that include green infrastructure*, EPA, <https://www.epa.gov/green-infrastructure/enforcement>

⁵³ *Green Infrastructure Permit and Enforcement Series Supplement 1: Consent Decrees that Include Green Infrastructure Provisions*, EPA 5, <https://www.epa.gov/sites/production/files/2015-10/documents/epa-green-infrastructure-supplement-1-061212-pj.pdf>.

disconnection to urban reforestation, and from permeable pavement to stormwater retention areas.⁵⁴ MSD listed 12 new green infrastructure projects that are being designed or are under construction in its latest quarterly report that are estimated to provide 8,027,338 gallons of residual average annual overflow reduction, and have an incentive value of \$3,406,210.⁵⁵ It noted in its annual report that it is working with EPA's Office of Research Development to monitor two particular areas "where green infrastructure alternatives have demonstrated more favorable benefit/cost ratios than overflow storage basins," and will publish findings in a future annual report.⁵⁶

b. Kansas City

Kansas City's 2010 consent decree provided for green infrastructure over nearly 750 acres to store enough stormwater to reduce overflows at two outfalls to six per year, and stipulated pilot projects be developed in several areas.⁵⁷ The 750 acres are meant to hold 3.5 million gallons of stormwater storage and are the sole control of overflows in that area, a project that is estimated to save the city \$10 million in capital costs relative to the gray infrastructure alternatives.⁵⁸ Another significant green infrastructure project is the Keep Out the Rain Program, which helps residents identify and correct illegal sewer and rainfall connections that send rainwater into the sanitary sewer for free.⁵⁹ 26 other green infrastructure contracts, valued at \$51 million, have helped fulfill consent decree requirements.⁶⁰ Kansas City also maps its green infrastructure projects including rain gardens and bioswales,⁶¹ and has a green neighborhood recognition program.⁶²

c. Chicago

Chicago's 2011 consent decree required a rain barrel program to distribute 15,000 low or no cost rain barrels within five years, and a cumulative total of 10 million gallons of design retention capacity of green infrastructure projects within 15 years.⁶³ It also required the development of a comprehensive land use policy, green infrastructure controls, community assistance, and projects or collaborations with local

⁵⁴ See, e.g., *Green Infrastructure Program*, Louisville MSD, <http://louisvillemsd.org/GreenMSD>.

⁵⁵ *Louisville and Jefferson County Wet Weather Consent Decree Quarterly Report #55*, Louisville MSD 21 (July 30, 2019),

<http://msdprojectwin.org/Portals/0/Library/Consent%20Decree%20Reporting/Quarterly%20Reports/2019/Quarterly%20Report%20Number%2055%20April%201%202019%20June%2030%202019%20dated%20July%2030%202019.pdf>.

⁵⁶ *Louisville and Jefferson County Wet Weather Consent Decree Annual Report*, Louisville MSD 100 (Dec. 30, 2018), <http://msdprojectwin.org/Portals/0/Library/Consent%20Decree%20Reporting/Annual%20Reports/Consent%20Decree%20Fiscal%20Year%202018%20Annual%20Report.pdf>.

⁵⁷ See City of Kansas City, Missouri Consent Decree, Appendix A at 8–13 (May 2010), <https://www.epa.gov/sites/production/files/documents/cityofkansascity-cd.pdf>

⁵⁸ *Kansas City, Missouri: A Case Study of How Green Infrastructure is Helping Manage Urban Stormwater Challenges*, NRDC 3, https://www.nrdc.org/sites/default/files/RooftopstoRivers_KansasCity.pdf.

⁵⁹ *Keep Out the Rain Program*, City of Kansas City, <https://www.kcmo.gov/programs-initiatives/smart-sewer/keep-out-the-rain-program>.

⁶⁰ *Smart Infrastructure Update: Kansas City's Capital Improvement Projects Fiscal Year 2020*, City of Kansas City 15 (Feb. 19, 2019), <https://www.kcmo.gov/home/showdocument?id=84>.

⁶¹ *KC Green Project Map*, City of Kansas City, <https://www.kcmo.gov/programs-initiatives/kc-green/kc-green-project-map>.

⁶² *Neighborhood Recognition Program*, City of Kansas City, <https://www.kcmo.gov/programs-initiatives/kc-green/neighborhood-recognition-program>.

⁶³ Metropolitan Water Reclamation District of Greater Chicago Consent Decree, Appendix E at 1–5 (Dec. 2011), https://www.epa.gov/sites/production/files/documents/mwrd-cd_0.pdf

communities.⁶⁴ Although there are no specific projects listed, the consent decree provides for a calculation of design retention capacity toward the 10 million gallon goal per 100 square feet of: rain gardens, native landscaping, stormwater trees, porous pavement, bioswales, green roofs, and greenways.⁶⁵

6. At a minimum, the consent decree must require the City to study and report on opportunities for using green infrastructure

Green infrastructure is a cost-effective complement to existing gray infrastructure solutions in the consent decree and provides other services that are important to the City and its goals. Even if the DOJ chooses not to include the specific projects below in Houston's consent decree, it should at least require the City to study the suitability of green infrastructure solutions across the sanitary sewer system, and provide for the development of pilot projects to test for large-scale viability. Such study periods and pilot projects are present in several other consent decrees and have been effective, such as in Louisville and Kansas City.⁶⁶

Any green infrastructure project undertaken, including those specified below, must be backed by research to ensure that it is feasible and effective. In the context of sanitary sewer systems such as Houston's, the goal of green infrastructure is to reduce inflow and infiltration of stormwater into the sewer.⁶⁷ Some green infrastructure projects—namely programs that target illicit connections between stormwater drainage and the sanitary sewer system—can directly reduce inflow by preventing water that would otherwise flow into the sanitary sewer from reaching inflow locations at all. But other projects focused on stormwater retention carry a risk of increasing infiltration if executed improperly.⁶⁸

The siting, soil type, and vegetation of such projects must be researched and accounted for in order to ensure each project's success and effectiveness.⁶⁹ As long as the City properly locates retention projects far enough away from sewer lines based on the soil and vegetation present at the site and the resulting effects on groundwater hydrology, they can reduce inflow by reducing stormwater peak flow rates and runoff volume without increasing infiltration volume and providing other tangible benefits, including pollution reduction and flood mitigation.⁷⁰

7. Potential green infrastructure pilot projects to include in the consent decree

To help understand the benefits of green infrastructure to address the City's storm-related SSOs, the consent decree also could require the City to complete pilot projects. Based on our review of the City of Houston's self-reported SSOs, Bayou City Waterkeeper identified several areas subject to repetitive, large-scale SSOs during wet weather, including:

⁶⁴ *Id.* at 2–4.

⁶⁵ *Id.* at 5.

⁶⁶ Houston Incentives, at 5-6. All four examples on those pages have some combination of a study period and pilot projects. Kansas City in particular identified specific locations where pilot projects were required to be developed. See *supra* note 13.

⁶⁷ Karen Sands & Tom Chapman, *Why Green Infrastructure and I/I Control Go Hand in Hand*, WaterWorld (Feb. 1, 2011), <https://www.waterworld.com/municipal/drinking-water/infrastructure-funding/article/16192310/why-green-infrastructure-and-ii-control-go-hand-in-hand>.

⁶⁸ *Determining the Potential of Green Infrastructure to Reduce Overflows in Milwaukee*, Fresh Coast Guardians 56 – 58 (Dec. 20, 2011), https://www.freshcoastguardians.com/application/files/7915/0427/9938/GI_Potential_w.pdf.

⁶⁹ *Id.*

⁷⁰ *Id.*

- University of Houston-Downtown;
- Parker Road near IH 69;
- Wrightwood Street near Woodland Park;
- Cambridge Street near Old Spanish Trail in the Medical Center; and
- Wheeler Avenue near the University of Houston College of Optometry.⁷¹

Each area has had SSOs that are attributed to wet weather events, which indicates that inflow and infiltration are at least partially to blame, and thus the use of green infrastructure to reduce stormwater impact can help these areas and complement the existing gray infrastructure projects.⁷²

All of these locations, but the last, are listed in Appendix C, which identifies locations with capacity constraints. The consent decree should include this location on Appendix C, or the Agencies and/or City should explain how capacity constraints at this location have been resolved. In addition to the locations outlined below, the City also should evaluate the other locations on Appendix C, not discussed here, for green infrastructure projects, particularly the location identified as “Area 6.” Overflows at this location pose a particular concern for public health given its proximity to JP Henderson Elementary School.

Based on other consent decrees and green infrastructure projects in urban areas, Houston’s consent decree should require the City to research and develop pilot projects for green infrastructure to ease the burden on the sanitary sewer system. A general pattern for approaching research and developing projects could be focusing on things like green roofs, permeable pavement, and bioswales⁷³ in high-density urban areas; looking into stormwater wetlands, and rain gardens in lower density and parkland areas; promoting neighborhood measures like rainwater cisterns, downspout disconnection (akin to the Kansas City “Keep Out the Rain” program), pocket parks, pocket wetlands, and rain gardens in suburban neighborhoods; and generally improving stormwater capacity and flood prevention measures along the existing natural waterways.

a. University of Houston-Downtown at Buffalo Bayou and White Oak Bayou

The City has frequently reported storm-related overflows at the University of Houston-Downtown, which sits above White Oak Bayou and Buffalo Bayou. During Imelda, the City reported a 275,100-gallon overflow at this location,⁷⁴ and in December 2018, the City reported a 117,000-gallon overflow.⁷⁵ In our

⁷¹ Draft Consent Decree, Appendix C, Areas 1, 2, and 4. Wheeler Ave. is not included on any of the maps in Appendix C.

⁷² Karen Sands & Tom Chapman, *Why Green Infrastructure and I/I Control Go Hand in Hand*, WaterWorld (Feb. 1, 2011), <https://www.waterworld.com/municipal/drinking-water/infrastructure-funding/article/16192310/why-green-infrastructure-and-ii-control-go-hand-in-hand>

⁷³ The plethora of large surface parking lots in particular are excellent candidates for permeable pavement and vegetated swales. See generally *Green Parking Lot Resource Guide*, EPA, http://www.streamteamok.net/Doc_link/Green%20Parking%20Lot%20Guide%20%28final%29.PDF. Some types of permeable pavement available to parking lots (such as synthetic grids [preferably made of recycled material] filled with fine gravel) can be inexpensive to install and maintain, and be more effective at filtering pollutants than porous asphalt or concrete. *Id.* at 23–30.

⁷⁴ City of Houston, Press Release (Sep. 20, 2019), available at https://mailchi.mp/houstontx/spillnotice_eastexparker?e=1a59e9e012 (Intense, sustained, rainfall from Tropical Storm Imelda resulted in the spill of [an estimated 275,100 gallons of] domestic wastewater at 100 North Milam Street at 700 Washington Avenue”) (last visited Oct. 3, 2019).

review of the City's self-reported data, we found that the City reported more than 1.2 million gallons of wastewater spilling at this location in 2014 and 2015. Appendix C of the consent decree identifies this as a location facing capacity constraints.⁷⁶

In planning for green infrastructure and identifying potential green infrastructure pilot projects, the City should evaluate whether University of Houston-Downtown is a good candidate for green infrastructure projects to reduce inflow and infiltration, including:

- Adapting undeveloped land west of the UH-Downtown campus into a stormwater wetland;
- A green roof incentive program, focusing on the UH-Downtown campus, on the building west of Louisiana Street and north of Franklin Street, and on the buildings between Commerce Street and Franklin Street northwest of Fannin Street where possible; and
- A permeable pavement and bioswale program in all the surrounding surface lots, particularly the lot on Washington Avenue, the lot on Main Street, and the lot surrounding the building on the north side of Franklin Street.

Green infrastructure projects at this location may be developed to complement the North Canal flood project, which reportedly will receive \$46 million from FEMA to address flooding in this location.⁷⁷

b. Parker Road by Halls Bayou

The City has repeatedly reported overflows in the area around Parker Road near the Eastex Freeway, including an overflow of more than 100,000 gallons during Tropical Storm Imelda⁷⁸ and a 168,000-gallon overflow in December 2018.⁷⁹ According to Bayou City Waterkeeper's review of the City's self-reported SSOs, during eight separate rain storms in 2015, the City reported to the TCEQ that more than 1 million gallons of untreated wastewater spilled at this location alone. Appendix C of the consent decree identifies this as a location facing capacity constraints.⁸⁰

In planning for green infrastructure and identifying potential green infrastructure pilot projects, the City should evaluate whether Parker Road is a good candidate for green infrastructure projects to reduce inflow and infiltration, including:

⁷⁵ Nicole Hensley, Boil order issued for private well users after Houston rainstorm causes wastewater spillage (Dec. 10, 2018), available at

<https://www.chron.com/news/houston-texas/houston/article/Boil-order-issued-for-private-well-users-after-13453193.php>

⁷⁶ Draft Consent Decree, Appendix C, Area 3.

⁷⁷ Zach Despart and Jasper Scherer, FEMA approves initial funding for long-sought North Canal flood project, Houston Chronicle (Oct. 11, 2019), available at

<https://www.houstonchronicle.com/news/houston-texas/houston/article/FEMA-approves-initial-funding-for-long-sought-14515615.php>

⁷⁸ City of Houston, Press Release (Sep. 19, 2019), available at

https://mailchi.mp/houstontx/spillnotice_eastexparker?e=1a59e9e012 (explaining "Intense, sustained, rainfall of greater than 9 inches in the last 24-hours resulted in the spill of [more than 100,000 gallons of] domestic wastewater at 10200 Eastex Freeway at Parker Road") (last visited Oct. 3, 2019).

⁷⁹ Nicole Hensley, Boil order issued for private well users after Houston rainstorm causes wastewater spillage (Dec. 10, 2018), available at

<https://www.chron.com/news/houston-texas/houston/article/Boil-order-issued-for-private-well-users-after-13453193.php>

⁸⁰ Draft Consent Decree, Appendix C, Area 1.

- Adapting undeveloped land north of Parker Road leading up to Halls Bayou and around Shady Lane Park into a larger-scale stormwater wetland;
- Paying for or incentivizing rain gardens in the area, particularly in the lower-density areas along the south portion of Parker Road, and along Shady Lane; and
- Incentivizing a “Keep Out the Rain” program in the neighborhoods that feed the Parker Road sanitary sewer line whereby the City inspects for and fixes illegal stormwater flows from residences for free, along with downspout disconnection and rain barrel incentive programs.

c. Wrightwood Street by Woodland Park and White Oak Bayou

The City has reported repeated storm-related SSOs in the area around 1200-1400 Wrightwood Street, on the edge of Woodland Park and White Oak Bayou. From 2014-2016, the City’s self-reported data reflects that this location had at least 13 overflows that sent more than 1 million gallons of untreated wastewater into White Oak Bayou. As recently as December 2018, the City reported a 206,000-gallon overflow at this location.⁸¹ Indeed, Appendix C of the consent decree identifies this as a location facing capacity constraints.⁸²

In planning for green infrastructure and identifying potential green infrastructure pilot projects, the City should evaluate whether this portion of Wrightwood Street is a good candidate for green infrastructure projects to reduce inflow and infiltration, including:

- Enhancing existing park facilities with stormwater wetlands or rain gardens in and around Woodland Park, and upstream along Little Whiteoak Bayou;
- Turning White Oak Drive, particularly west of the Sabine Street intersection, into a green street, by adding planter boxes, bioswales, and permeable pavement; and
- A “Keep Out the Rain” program in the neighborhoods that feed the Wrightwood Street sanitary sewer line whereby the City inspects for and fixes illegal stormwater flows from residences for free, along with downspout disconnection and rain barrel incentive programs.

d. Cambridge Street in the Texas Medical Center near Brays Bayou

The City has reported several storm-related SSOs in the area around Cambridge Street near Old Spanish Trail in the Medical Center. In 2015 alone, over several blocks on Cambridge in this area, the City reported 21 overflows, representing 1.9 million gallons of wastewater that left the system untreated. Appendix C of the consent decree identifies this as a location facing capacity constraints.⁸³

In planning for green infrastructure and identifying potential green infrastructure pilot projects, the City should evaluate whether this portion of Cambridge Street is a good candidate for green infrastructure projects to reduce inflow and infiltration, including:

- A green roof incentive program, particularly on the numerous medical buildings in the area and in light of the lack of unpaved green space in the area;

⁸¹ Nicole Hensley, Boil order issued for private well users after Houston rainstorm causes wastewater spillage (Dec. 10, 2018), available at <https://www.chron.com/news/houston-texas/houston/article/Boil-order-issued-for-private-well-users-after-13453193.php>

⁸² Draft Consent Decree, Appendix C, Area 2.

⁸³ Draft Consent Decree, Appendix C, Area 4.

- A rain garden “pocket park” or “pocket wetland” incentive program in the surrounding area;
- A stormwater wetland or rain gardens on the west side of Cambridge Street, in between Lamar Fleming Street and Braeswood Boulevard;
- A permeable pavement and bioswale program in all of the surrounding parking lots; and
- A “Keep Out the Rain” program in the neighborhoods that feed the Cambridge Street sanitary sewer line whereby the City inspects for and fixes illegal stormwater flows from residences for free, along with downspout disconnection and rain barrel incentive programs.

e. Wheeler Avenue at the University of Houston near Brays Bayou

The area around 8100 Wheeler Avenue near the University of Houston College of Optometry and Texas Spur 5 had repeated storm-related SSOs during the time period reviewed by Bayou City Waterkeeper, and particularly in 2016. From April to October of 2019, moreover, the City attributed five more overflows at this location to wet weather, representing more than 86,320 gallons of untreated wastewater.

This location is not identified on Appendix C. The consent decree should include this location on Appendix C, or the DOJ, State, and City should explain how capacity constraints at this location have been resolved.

In planning for green infrastructure and identifying potential green infrastructure pilot projects, the City should evaluate whether 8100 Wheeler is a good candidate for green infrastructure projects to reduce inflow and infiltration, including:

- A green roof incentive program at the University of Houston;
- Stormwater wetlands or rain gardens on the south side of Wheeler alongside Brays Bayou, and in the median between the opposing lanes of traffic on Texas Spur 5;
- A permeable pavement and bioswale program in the University of Houston parking lots; and
- A “Keep Out the Rain” program in the neighborhoods that feed the Wheeler Avenue sanitary sewer line whereby the City inspects for and fixes illegal stormwater flows from residences for free, along with downspout disconnection and rain barrel incentive programs.

8. Opportunities for green infrastructure in the consent decree

Bayou City Waterkeeper recommends the consent decree be modified to specifically require green infrastructure planning within the consent decree:

¶	Current Language	Proposed Language (changes in bold)
Whereas	None	WHEREAS, the City commits to implementing green infrastructure – constructed projects that redirect stormwater from reaching sewers by capturing and diverting it to locations where it is detained, infiltrated into the ground, evaporated, taken up by plants, or reused. The overall objective for the City’s green infrastructure program is to identify and implement projects and programs that will significantly reduce wet weather-related SSOs. Green infrastructure can supplement

		<p>redevelopment efforts, add green space to cities, increase recreational opportunities, increase groundwater recharge, improve air quality, increase property values, enhance urban quality of life, and improve human health. The City's program focuses on areas within the City that represent some of the most economically-distressed portions of the Houston community.⁸⁴</p>
9		<p><i>[Add new definition]</i></p> <p>"Green Infrastructure" shall mean systems and practices that use or mimic natural processes to infiltrate, evapotranspire, and/or harvest stormwater on or near the site where it is generated. Green Infrastructure may include, but is not limited to, green roofs, downspout disconnection, trees and tree boxes, rain gardens, vegetated swales, pocket wetlands, infiltration planters, vegetated median strips, permeable pavements, reforestation, and protection and enhancement of riparian buffers and floodplains.</p>
13	If a lack of capacity is determined to be the cause of the SSOs..., the City shall perform a capacity remedial alternatives analysis to address the identified capacity constraint at the area associated with the WCTS asset and shall implement remedial action to address the capacity constraint.	If a lack of capacity is determined to be the cause of the SSOs..., the City shall perform a capacity remedial alternatives analysis, including whether green infrastructure could resolve or alleviate the capacity constraint , to address the identified capacity constraint at the area associated with the WCTS asset and shall implement remedial action to address the capacity constraint.
19	The City shall conduct pilot studies to evaluate treatment technology for the Scott Street and Northside WWFs to achieve effluent that meets the water quality standards for the receiving stream and the CWA's secondary treatment requirements.	The City shall conduct pilot studies to evaluate treatment technology and green infrastructure alternatives for the Scott Street and Northside WWFs to achieve effluent that meets the water quality standards for the receiving stream and the CWA's secondary treatment requirements.
20	The City shall conduct pilot studies (such as, but not limited to, flocculation, filtration, and/or biological treatment) at the Scott Street WWF and the Northside WWF...	The City shall conduct pilot studies (such as, but not limited to, green infrastructure , flocculation, filtration, and/or biological treatment) at the Scott Street WWF and the Northside WWF...
25	The system-wide inspection and assessment activities are designed to identify defects in the WCTS that have	The system-wide inspection and assessment activities are designed to identify defects in the WCTS, including I/I entry points , that have

⁸⁴ Similar language was included in St. Louis' consent decree.

<https://www.epa.gov/sites/production/files/2013-09/documents/stlouis-cd.pdf>

	caused or significantly contributed to previous SSOs...	caused or significantly contributed to previous SSOs....
29	Gravity Sewer Mains or manholes discovered to be rated as Category 4 and 5 shall go into the City's Remedial Measures Alternative Analysis process, where the City determines the most practical solutions for resolving defects and the timetable for implementing those solutions considering the long-term performance.	Gravity Sewer Mains or manholes discovered to be rated as Category 4 and 5 shall go into the City's Remedial Measures Alternative Analysis process, where the City determines the most practical solutions for resolving defects, complementary green infrastructure projects where appropriate , and the timetable for implementing those solutions, considering both the long-term performance and environmental impacts .
31	During the inspections, the City shall assess each Force Main by reviewing past maintenance records, noting the age or installation date, physically examining the air- or vacuum-release valves, and visually inspecting the ground surface over the entire length of the Force Main...	During the inspections, the City shall assess each Force Main by reviewing past maintenance records, noting the age or installation date, physically examining the air- or vacuum-release valves, identifying I/I entry points and their hydrological sources or causes , and visually inspecting the ground surface over the entire length of the Force Main...
32(ii)	SSOs;	SSOs, including I/I sources and local hydrology that may contribute to SSOs during wet weather events ;
34	In each Annual Report, the City shall document the inspection and Condition Assessment activities (Condition Assessment Summary) undertaken by providing a summary of identified Category 1 through 5 Gravity Sewer Mains and manholes, as well as defects identified during the inspections of Force Mains and Lift Stations.	In each Annual Report, the City shall document the inspection and Condition Assessment activities (Condition Assessment Summary) undertaken by providing a summary of identified Category 1 through 5 Gravity Sewer Mains and manholes, as well as defects identified during the inspections of Force Mains and Lift Stations, I/I entry points, and the effects of local hydrology on the identified defects .
35	N/A	<i>[Add to list]</i> vi. Green infrastructure projects
40	The evaluation report shall assess the capability of the WWTPs to function in accordance with their permits during the following five-year period.	The evaluation report shall assess the capability of the WWTPs to function in accordance with their permits during the following five-year period and whether green infrastructure may be implemented to improve each WWTP's performance under their respective permits .
40(c)	Provide recommendations and schedules for corrective actions that shall be performed as identified in the Annual report.	Provide recommendations and schedules for corrective actions and complementary green infrastructure projects that shall be performed as identified in the Annual report.
43(k)	To address defective Private Laterals	To address defective Private Laterals that are

	that are found to significantly contribute I/I to a capacity constraint, the City shall:	found to significantly contribute I/I to a capacity constraint, the City shall:
43(k)(i)	The information, whether written or verbal, shall inform the owner to contact a plumber to resolve the defective Private Lateral.	The information, whether written or verbal, shall inform the owner to contact a plumber to resolve the defective Private Lateral, and that the owner shall be reimbursed for the cost of correcting the defective Private Lateral.
43(k)(ii)	If the defective Private Lateral has not been addressed by the owner prior to the BCE investigator's inspection, BCE shall inform the owner to hire a plumber to correct the defective Private Lateral.	If the defective Private Lateral has not been addressed by the owner prior to the BCE investigator's inspection, BCE shall inform the owner to hire a plumber to correct the defective Private Lateral and that the owner shall be reimbursed for the cost of correcting the defective Private Lateral.
47, et seq	N/A	<p><i>[Add to Section V]</i></p> <p><u>Green Infrastructure Plan.</u> Within twenty-four (24) months after the Effective Date of the Consent Decree, the City shall submit to the Agencies for approval a Green Infrastructure Program Plan (the "GI Plan"). The GI Plan shall include the following elements:</p> <p>(a) GI Locations. The GI Plan shall identify all locations in the City's system vulnerable to wet-weather overflows and/or I/I and assess whether GI may replace or complement planned gray infrastructure improvements.</p> <p>(b) GI Projects and/or Collaborations. By itself or in collaboration with other stakeholders, the City shall work to identify opportunities for the development of GI projects and/or collaborations for the areas identified in (a) through the following actions described in the GI Plan:</p> <p>i. Establishing Partnerships and Collaboration with Other Stakeholders. The City shall identify and engage other stakeholders in its service area to plan and implement GI projects. These stakeholders may include members of neighborhoods within 2 miles of a GI Location; other members of the public; municipal and governmental entities; non-governmental organizations; business and commercial entities; and other interested parties. The City shall outline procedures to work in collaboration with these partners to identify, plan and implement GI projects.</p> <p>ii. Public Participation. The City shall establish and describe in the GI Plan, a public</p>

		<p>participation process that provides information about the Plan and development of GI projects. The public participation process shall also provide opportunity for public comment regarding the selection, conceptual design, and location of GI projects. The public participation process shall be open to all who live in the City's service area, and will include measures to engage people living in neighborhoods within a two-mile radius of GI Locations identified in (a).</p> <p>iii. Geographic Coverage/Decision Criteria. The City shall include prioritization criteria and processes for selecting locations and specifications for GI projects to be implemented as part of the program. The prioritization scheme for selected locations shall include areas where: (1) GI control measures will help reduce flooding, I/I, and backups; (2) land ownership will readily accommodate permanent GI control measures and their maintenance, such as areas where vacant parcels can be retrofitted into "stormwater parks," which would store and infiltrate or reuse rainfall and runoff and also be an amenity for local residents; and (3) GI control measures can improve socio-economic conditions in the City's service area, with the highest priority given to neighborhoods where the need for improvement is greatest.</p> <p>iv. Preservation of Constructed GI Projects. The City shall work with partners and stakeholders to plan legal and institutional mechanisms (1) to preserve and maintain constructed GI projects that are put in place under this section and (2) to ensure that future site or land use changes do not result in the loss of the runoff reduction benefits of constructed GI projects. The City shall share with partners and stakeholders the best management practices developed under the GI Plan.</p> <p>(d) Community Assistance. The City shall provide administrative and technical assistance to communities within its service area to facilitate implementation of GI practices to address I/I, such as identification of vacant parcels for potential GI projects and assistance with design and construction of stormwater infiltration, capture and/or reuse sites. The City shall identify the different forms of assistance</p>
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		<p>that the City may make available to the collaborating communities, including City staff with expertise in GI planning, site design, implementation, maintenance, and monitoring. The City shall work on updates to local codes and ordinances to remove barriers to GI implementation. In carrying out the community assistance efforts, the City shall dedicate at least one City employee full time equivalent position to provide technical assistance to communities within the service area.</p> <p>(e) Implementation Schedule. The GI Plan shall include a process for setting Green Infrastructure control measure priorities and expeditious implementation schedules.</p>
54	<p>Deliverables Subject to Review and Approval. The Capacity Remedial Measures Plan(s), the TCEQ Letter of Authorization request, the WWF Pilot Testing Result Report, the WWF Full Scale Treatment Plans, the Scott Street WWF Remedial Measures Plan, the Northside WWF Remedial Measures Plan, and the CMOM Program Plan shall be subject to the review and approval process described in Paragraph 57 below....</p>	<p>Deliverables Subject to Review and Approval. The Capacity Remedial Measures Plan(s), the TCEQ Letter of Authorization request, the WWF Pilot Testing Result Report, the WWF Full Scale Treatment Plans, the Scott Street WWF Remedial Measures Plan, the Northside WWF Remedial Measures Plan, and the CMOM Program Plan, and the Green Infrastructure Plan shall be subject to the review and approval process described in Paragraph 57 below....</p>
68	<p>A list and map of new areas with capacity constraints, remedial alternative analysis for each new area, remedial action taken or to be taken along with a timeline for completion of each remedial action.</p>	<p>A list and map of new areas with capacity constraints, remedial alternative analysis for each new area, assessment of possible green infrastructure projects for each new area, remedial action taken or to be taken along with a timeline for completion of each remedial action.</p>
131(d)	<p>The City may, subsequent to EPA's approval of a Remedial Measures Plan under Section V (Compliance Requirements), based on new or additional information, substitute a new Work Project or redefined Work Project under an EPA-approved Remedial Measures Plan, provided that any such new or redefined Work Project offers substantially the same or better CWA Compliance Benefits.</p>	<p>The City may, subsequent to EPA's approval of a Remedial Measures Plan under Section V (Compliance Requirements), based on new or additional information or the existence of a green infrastructure alternative or complement, substitute a new Work Project or redefined Work Project under an EPA-approved Remedial Measures Plan, provided that any such new or redefined Work Project offers substantially the same or better CWA Compliance Benefits.</p>

9. The consent decree seems to presume, rather than attempt to end, the continued inflow and infiltration of wastewater infrastructure

The consent decree requires planning to prevent sewer asset surcharge during a five-year, six-hour rain event.⁸⁵ This standard seems to allow Houston's wastewater collection and treatment systems to continue to face infiltration and inflow from rain events that exceed this standard. To address wet weather-related SSOs, the consent decree should be modified to focus on eliminating infiltration and inflow at the source.

In responding to this comment, Bayou City Waterkeeper asks the Agencies to explain why this standard was chosen and how many rain events over the last five years exceeded this standard. If this standard will continue to allow infiltration and inflow, the Agencies must explain how the consent decree nonetheless will reduce overflows caused by continued infiltration and inflow over the life of the consent decree.

10. Additional wet weather recommendations

We also recommend the consent decree include additional provisions to address infiltration and inflow. Specifically, the consent decree must require the City to:

- Evaluate infiltration and inflow with flow and rainfall monitoring,⁸⁶
- Implement sewer rehabilitation and replacement specifically to reduce infiltration and inflow,⁸⁷
- Develop emergency response plan to address SSOs during storms;
- Evaluate how to support green infrastructure and wet weather improvements through a Supplemental Environmental Project. See Section VI-4 below.

VI. Equity & Environmental Justice

Across Houston, lower-income communities of color are the “most likely to feel the consequences of Houston's long-running struggle with sewer overflows.”⁸⁸ The consent decree must account for, and not compound, these historic inequities. The consent decree's failures to address these inequities and environmental justice are glaring oversights that must be corrected.

The Agencies, and the EPA in particular, have a duty to ensure that the City is complying with Title VI of the Civil Rights Act of 1964. Before approving the consent decree, the EPA must require the City to implement the consent decree in a way that results in equitable resource allocation to neighborhoods of color.

1. Understanding and addressing issues of equity and environmental justice must be a priority

Before finalizing the consent decree, the Agencies and City must understand how Houston's wastewater problems disproportionately impact low-income communities and communities of color and

⁸⁵ See, e.g., Draft Consent Decree ¶¶ 12-14

⁸⁶ Atlanta's First Amended Consent Decree, at p.38, available at <https://www.epa.gov/sites/production/files/documents/atlanta1999-cd.pdf>

⁸⁷ *Id.*

⁸⁸ Mike Morris, Sewer spills put city under EPA scrutiny, Houston Chronicle (Aug. 27, 2016), available at <https://www.houstonchronicle.com/news/houston-texas/houston/article/Sewer-spills-put-city-under-EPA-scrutiny-9188683.php>.

integrate your findings into the consent decree's planning and prioritization framework. To that end, the Agencies and City must include impacts on environmental justice communities as an explicit factor in the consent decree's prioritization framework in Appendix D. To the extent any Early Action Projects should be reprioritized or added to address these issues, this should be done before the consent decree is final.

If this assessment already has been undertaken, we ask the Agencies to explain this assessment, formalize it through planning and reporting provisions in the consent decree, and urge the City to share its findings with the public.

Further, as discussed in Section IX-5, the consent decree should require the City to continue to study and report on equity and environmental justice aspects of its wastewater problems over the life of the consent decree, including impacts on environmental justice communities; assess whether the current projects under the consent decree address historic inequities and/or environmental justice concerns; and propose projects or other plans to account for these inequities and concerns.

2. The consent decree must include Early Action Projects to address SSOs related to Sims Bayou and Northwest WWTPs

The consent decree does not identify any Early Action Projects associated with Sims Bayou WWTP or Northwest WWTP. Bayou City Waterkeeper's analysis of the City's self-reported SSOs found 1,601 potential violations associated with Sims Bayou WWTP from July 2013 to June 2018—second to one other WWTP. Over this same time period, the City reported 427 potential violations associated with its Northwest WWTP, also making it one of the City's WWTPs with the most potential violations.

Meanwhile, facilities with far fewer potential violations, including Kingwood Central (26 potential violations), Greenridge (86 potential violations), and Westway (13 potential violations), are slated for early action projects.

The Sims Bayou and Northwest WWTFs are located in areas where residents have relatively low median family income compared to other areas in Houston. This raises a potential environmental justice issue. The Agencies must assess and address this issue and include in the consent decree early action projects related to these two facilities.

Alternatively, in responding to these comments, the Agencies must explain how these issues are already addressed under the consent decree.

3. The consent decree must require the City to study and report on rate increases and identify mechanisms for reducing rates over the long-term

The consent decree commits the City to spend \$2 billion over 15 years. This financial commitment will produce rate increases, the amounts of which are currently unknown. St. Louis' consent decree, involving \$4.7 billion over 23 years, will cost each resident about \$3,600 over that time period.⁸⁹ The City of Atlanta raised its rates by 252% over 10 years.⁹⁰

⁸⁹ Erick Trickey, How a Sewer Will Save St. Louis, *Politico Magazine* (Apr. 20, 2017), <https://www.politico.com/magazine/story/2017/04/20/st-louis-infrastructure-sewer-tunnel-water-system-215056>

⁹⁰ Second Amendment to the City of Atlanta's First Amended Consent Decree, at 3, <https://elr.info/sites/default/files/doj-consent-decrees/cityofatlanta2ndamendto1stamendedcd2012final.pdf>

The Mayor of Houston has said that a rate study will take place in early 2020, well after this comment period closes, and presumably after the consent decree is final. Until that study is complete, residents will not know how the City's commitment of ratepayers' funds will affect their monthly budgets. It is unclear what methodology the City will use and what factors it will consider.

According to initial analysis of Houston Public Works and Census Bureau data by the Houston Chronicle, "[t]he average city sewer bill already exceeds what the Environmental Protection Agency considers affordable for more than 113,500 Houston families... That could rise to more than a quarter of all Houston households if sewer costs increase by 19 percent."⁹¹ The Houston Chronicle summarized shortcomings in current EPA guidelines regarding rates, which aim to keep annual sewer charges below 2 percent of the citywide median household income: An EPA-sponsored study discredited these guidelines because they obscure burdens on poor families.

Nothing in the consent decree obligates the City to undertake this study or consider criteria that reflect the special circumstances of Houston residents.

We therefore ask for the consent decree to be modified to require the City to undertake a rate study no later than 60 days from the consent decree's effective date and account for shortcomings in the EPA's guidelines by considering all water costs, rather than sewer costs in a vacuum, and focusing its criteria on low-income users most vulnerable to rate increases, rather than Median Household Income.⁹² The study also should evaluate mechanisms for reducing sewer rates (both across the board and for certain income thresholds), including progressive sewer rates, the implementation of energy-saving technology (like cogeneration technology), and applying for grants to offset costs associated with resilience-related measures and wet-weather improvements.

Once this report is complete, the City must publish it on the website with the consent decree and include summaries in Spanish, Vietnamese, and Mandarin, distilling its conclusions and identifying all currently known resources for reducing individual sewer rates.

The consent decree must require the City to report on sewer rates annually, including any increases in rates, reasons for increases, and efforts to reduce rates.⁹³ This reporting must be incorporated in annual reporting, including the "State of the Water" report and forum described above.

⁹¹ Mike Morris, Is your Houston water bill too high? A \$2B EPA sewer mandate won't help, Houston Chronicle (July 23, 2019), <https://www.houstonchronicle.com/news/houston-texas/houston/article/Is-your-Houston-water-bill-too-high-A-2B-EPA-14117979.php>

⁹² A Report by a Panel of the National Academy of Public Administration, Developing a New Framework for Community Affordability of Clean Water Services, available at https://www.napawash.org/uploads/Academy_Studies/NAPA_EPA_FINAL_REPORT_110117.pdf

⁹³ For an example, see Louisville MSD's Annual Report for 2017, at 12, which updates readers on sewer rates in connection with consent decree. Louisville Municipal Sewer District, Annual Report for FY2017, available at <http://louisvillemisd.org/sites/default/files/inline-files/MSD%20CAFR%202017web.pdf>.

We recommend the following additions to address these concerns:

	Proposed language
p. 1-3	<p><i>[Add to list of “Whereas” clauses]</i></p> <p>WHEREAS, infrastructure improvements and upgrades as required by law and this Consent Decree are designed to eliminate or reduce overflows from the Sewer System in order to improve water quality and protect human health and the environment. These improvements and upgrades will require significant capital expenditures. While the City relies primarily on user fees, it plans to pursue a combination of additional available funding sources, including, but not limited to, State assistance, federal assistance, bonding, and any other public and private financing to assist in implementation of such improvements. The Parties have agreed to a program that [the City] will implement to eliminate or reduce its overflow sources, on a schedule that recognizes the financial capabilities of its ratepayers as well as the engineering demands required for this substantial capital investment.⁹⁴</p>
§ IX, p. 48	<p><i>[Add to reporting requirements]</i></p> <p>Water and Wastewater Rates</p> <ol style="list-style-type: none"> 1. Within 60 days of the Effective Date, the City must publish the results of a rate study (“Rates Report”) following the recommendations of <i>A Report by a Panel of the National Academy of Public Administration, Developing a New Framework for Community Affordability of Clean Water Services</i>. 2. At a minimum, the Rates Report should: <ol style="list-style-type: none"> a. Include all water costs, not just selected clean water costs, to include all drinking water and clean water costs—SSO control costs, stormwater costs, other sewer costs—as well as planned water infrastructure investments and any deferred costs of system operations and maintenance, in the burden assessment; b. Focus on the income of low-income users most vulnerable to rate increases rather than Median Household Income; c. Identify the size of the vulnerable users relative to the utility’s total rate payer base; d. Avoid arbitrary normative thresholds to determine relative burdens; e. Identify all existing programs for reducing individual sewer rates; f. Identify mechanisms for reducing sewer rates, including, but not limited to, State assistance, federal assistance, bonding, and any other public and private financing to assist in implementation of such improvements. 3. The Rates Report must be translated into Spanish, Vietnamese, and Mandarin and published on the City’s website. 4. On an annual basis, the City must update this study and also report on any increases in rates, the reasons for increases, and efforts to reduce rates (“Rates Report Update”). 5. The Rates Report and Rates Report Update must be incorporated in annual reporting to the public. 6. The City must share an overview of, and information about how to access, the Rates Report and Rates Report Update quarterly in water bills, by whatever means the user has elected to receive that water bill.

⁹⁴ This language comes from [St. Louis’s 2013 consent decree](#).

4. The consent decree must require Supplemental Environmental Projects (SEPs) or increase the penalty the City must pay

In Bayou City Waterkeeper's lawsuit, we identified more than 9,300 overflows and discharges which we contend violate the Clean Water Act. The Agencies' enforcement action purports to be broader in scope. Looking at Bayou City Waterkeeper's lawsuit alone, we could expect the City to be liable for hundreds of millions of dollars in penalties. The consent decree requires the City to pay the federal and state governments only \$4.4 million in penalties within 60 days after the consent decree is entered by the Court.⁹⁵ In responding to these comments, the Agencies should explain why the City has received a significant discount to the hundreds of millions of dollars in penalties that we would expect given the high number of violations.

Both federal and state policies provide mechanisms for municipalities to mitigate their penalty amounts by investing in Supplemental Environmental Projects.⁹⁶ In the case of municipalities facing penalties under the Clean Water Act, "a municipality continues to be eligible to mitigate up to 40% of the penalty for a SEP..."⁹⁷ Further, "[w]here a SEP provides significant benefits to a community with environmental justice concerns, case teams should be willing to consider, in consultation with OECA's National SEP Policy Coordinators, giving higher penalty mitigation credit for projects of outstanding quality."⁹⁸

In the enforcement context, EPA has identified as a goal: "Increase the number of supplemental environmental projects and mitigation projects affecting overburdened communities."⁹⁹ Despite this goal, and despite the City's public representation that the consent decree would include a "supplemental environmental project to replace defective private sewer lines in a low-income area of the City where laterals have caused or contributed to SSOs at no cost to the homeowners,"¹⁰⁰ the consent decree does not include any SEPs or similar requirements.

SEPs are routine in consent decrees like this one. Several other consent decrees offer examples of SEPs that would be appropriate in Houston and benefit local residents and water quality:

⁹⁵ Draft Consent Decree, ¶ 47.

⁹⁶ EPA, Issuance of the 2015 Update to the 1998 U.S. Environmental Protection Agency Supplemental Environmental Projects Policy (Mar. 10, 2015), available at <https://www.epa.gov/sites/production/files/2015-04/documents/sepupdatedpolicy15.pdf>; Texas Water Code § 7.067; Texas Commission on Environmental Quality, SEPs: Putting Fines to Work Closer to Home (Oct. 2015), https://www.tceq.texas.gov/assets/public/comm_exec/pubs/gi/gi-352.pdf

⁹⁷ EPA, Issuance of the 2015 Update to the 1998 U.S. Environmental Protection Agency Supplemental Environmental Projects Policy, at 23 (Mar. 10, 2015), <https://www.epa.gov/sites/production/files/2015-04/documents/sepupdatedpolicy15.pdf>

⁹⁸ *Id.* at 24.

⁹⁹ EJ 2020 Action Agenda: The US EPA's Environmental Justice Strategic Plan for 2016-2020, at 3, 21, https://www.epa.gov/sites/production/files/2016-05/documents/052216_ej_2020_strategic_plan_final_0.pdf

¹⁰⁰ How is the City Addressing Thousands of Sewage Overflows? Houston Public Media (Aug. 16, 2018) (quoting from City of Houston press statement), available at <https://www.houstonpublicmedia.org/articles/shows/houston-matters/2018/08/16/300159/how-is-the-city-addressing-thousands-of-sewage-overflows/> (last visited Sep. 18, 2019).

- **Lexington:** \$1 million to stabilize stream banks, restore habitat, and create a greenway¹⁰¹ and \$1.3 million to eliminate an especially problematic wastewater treatment plant from its system¹⁰²
- **DC:** \$1.7 million to install rain gardens and other green infrastructure¹⁰³
- **Chattanooga:** \$800,000 to restore and stabilize a stream and its tributary and \$238,000 investment in green infrastructure demonstration projects in a downtown neighborhood¹⁰⁴
- **Atlanta:** \$25 million to acquire and maintain city greenways and conduct a one-time trash and debris cleanup project from the banks of streams in the city¹⁰⁵

Other examples include Baltimore¹⁰⁶ (SEP to supplement >\$13 million in biological nutrient removal upgrades to WWTP), Evansville¹⁰⁷ (\$4-6.5 million to connect failing septic systems to sewer system), St. Louis¹⁰⁸ and Kansas City, Mo.¹⁰⁹ (each investing \$1.6 million to implement a sewer connection and septic tank closure program), Jackson¹¹⁰ (\$875,000 to eliminate illicit stormwater connections and repair private lateral sewer lines from low-income residences), Independence¹¹¹ (\$450,000 to stabilize soil and banks and use native grasses and flowers at three water detention basins), Lima¹¹² (\$218,400 to revitalize river bank), and Fitchburg¹¹³ (\$100,000 to minimize future discharges).

The penalty that the City must pay the United States and the State of Texas represents millions of dollars that the City will not be able to reinvest in local communities most affected by the City's SSO problem. The Agencies should explain whether any state or federal SEPs were considered and if so, why they were rejected. Houston residents have the right to know why penalties associated with the consent decree will not be reinvested in their own communities.

The Agencies should reconsider any decisions to reject a SEP. The Agencies must also require the City to seek community input on potential SEPs using some part of the \$4.4 million in federal and state penalties ordered under the consent decree. These SEPs must either be incorporated into the consent decree, or the consent decree must be amended within a set time period after appropriate SEPs are identified.

¹⁰¹ Appendix J-1 to Lexington-Fayette Consent Decree, available at https://drive.google.com/file/d/0BxW9pi_VxmgpVk8tN0JSckFBbEk/view?pref=2&pli=1

¹⁰² Appendix K-1 to Lexington-Fayette Consent Decree, available at https://drive.google.com/file/d/0BxW9pi_VxmgpN3BjdjRyRFRuZTA/view?pref=2&pli=1

¹⁰³ Megan Ulrich, Cleaning Up the Capital's Rivers: Solving the Problem of Combined Sewer Overflows in Washington, D.C., *The Journal of Science Policy & Governance*, Vol. 4, Issue 1, at 15, available at http://www.sciencepolicyjournal.org/uploads/5/4/3/4/5434385/sewer_overflows_in_dc.pdf

¹⁰⁴ DOJ, Press Release, U.S. and Tennessee Announce Clean Water Act Agreement with the City of Chattanooga (July 17, 2012), <https://www.justice.gov/opa/pr/us-and-tennessee-announce-clean-water-act-agreement-city-chattanooga> (last visited Sep. 18, 2019).

¹⁰⁵ epa.gov/sites/production/files/2013-10/documents/atlanta1998-cd.pdf

¹⁰⁶ <http://www.baltimorecity.gov/sites/default/files/Consent%20Decree.pdf>

¹⁰⁷ <https://www.epa.gov/compliance/resources/cases/civil/cwa/cityofevansville.html>

¹⁰⁸ <https://www.epa.gov/enforcement/st-louis-clean-water-act-settlement>

¹⁰⁹ <https://www.epa.gov/sites/production/files/documents/cityofkansascity-cd.pdf>

¹¹⁰ <https://www.justice.gov/opa/pr/us-and-mississippi-announce-clean-water-act-agreement-city-jackson>

¹¹¹ <https://www.epa.gov/enforcement/independence-missouri-clean-water-act-settlement>

¹¹² <http://www.cityhall.lima.oh.us/DocumentCenter/View/1691/LimaDecreeFinal011315?bidId=>

¹¹³ <https://www.epa.gov/enforcement/city-fitchburg>

Potential SEPs that the Agencies and City must consider include:

- replacing defective private sewer lines in low-income areas of the City where laterals have caused or contributed to SSOs,¹¹⁴
- annual reporting on sewer rates and communication about meetings via mailers (Section VI-3),
- green infrastructure to complement efforts to reduce weather-related overflows (Section V),
- funding the upkeep of a Community Wastewater Committee (Section VIII-5),
- robust public information-sharing (discussed in Sections VI-3, VIII-5,6,7,8,9 and IX).

VII. Resilience

This year, the City has invested significant time and resources in developing a Resilience Plan and a Climate Action Plan. The goal of this planning is to “prepare for, withstand, and bounce back from the ‘shocks’—catastrophic events like hurricanes, floods...—and ‘stresses’—slow-moving disasters like aging infrastructure... and economic inequality, which are increasingly part of 21st century life.”¹¹⁵

This planning implicates Houston’s wastewater infrastructure, which presents a critical public and environmental health issue that we cannot delay for another generation. Houston, like cities across the U.S., has an expansive but aging wastewater system that was built to meet the needs of a much smaller population. Population growth and climate change, through increasingly severe weather (like Harvey, Imelda, and the Tax Day and Memorial Day floods, to name a few) and sea-level rise, will strain our aging sewer systems, and must be addressed through the consent decree.

With the implementation of the City’s two plans aimed at addressing resiliency, Houston can better complement its environmental adaptation with mitigation and investments that create a more livable future for all Houstonians. Given the serious investments in planning and implementation already underway, the City should view the consent decree as an opportunity to commit to projects that can future-proof our wastewater system.

1. Climate change poses real threats to wastewater infrastructure

The National Climate Assessment Report has warned:

Wastewater management and drainage systems are also at risk. Systems will become overwhelmed with increased rainfall intensity over more impervious surfaces, such as asphalt and concrete. Sea level rise will cause a variety of problems including salt water intrusion into coastal aquifers. Together, climate change impacts increase the risks of urban flooding, combined sewer overflows, deteriorating coastal water quality, and human health impacts.¹¹⁶

Harvey showed the impacts a single storm may have on the City’s wastewater infrastructure: Nearly 31.6 million gallons of raw sewage spilled across southeast Texas in the wake of Harvey and further

¹¹⁴ How is the City Addressing Thousands of Sewage Overflows? Houston Public Media (Aug. 16, 2018) (quoting from City of Houston press statement), available at <https://www.houstonpublicmedia.org/articles/shows/houston-matters/2018/08/16/300159/how-is-the-city-addressing-thousands-of-sewage-overflows/> (last visited Sep. 18, 2019).

¹¹⁵ Chief Resilience Officer, Office of the Mayor, <https://www.houstontx.gov/mayor/chief-resilience-officer.html> (last visited Oct. 2, 2019).

¹¹⁶ U.S. Global Change Research Program, National Climate Assessment: Highlights, available at <https://nca2014.globalchange.gov/highlights/regions/coasts>

contaminated already-toxic floodwaters.¹¹⁷ The City's Cedar Bayou WWTP was destroyed, and its Turkey Creek and West District WWTPs were flooded and temporarily closed.¹¹⁸

In the last month, Tropical Storm Imelda showed that Houston will continue to suffer from large-scale water pollution each time it faces a storm. Imelda required the City to notify the public of two separate spills of untreated wastewater: 275,100 gallons of wastewater near the University of Houston-Downtown, and at least 100,000 gallons of wastewater at Parker Road off Eastex Freeway.¹¹⁹ These harms are not limited to storms like Harvey and Imelda. Excluding Harvey, from 2013-2018, Houston's wastewater systems became overburdened repeatedly during rainstorms and released more than 15 million gallons of untreated wastewater into local waterways and neighborhoods.¹²⁰

The City's own self-reported data of SSOs attributed to wet weather, when compared to corresponding rainfall data, shows that even a half-inch to an inch of rain is enough to overwhelm its collection systems. Between January 1, 2016 and December 31, 2017, Houston Intercontinental Airport weather station reported 68 days with rain amounts equal to or greater than a half inch.¹²¹ If the City wastewater collection, transmission, storage, and treatment system is vulnerable to rain amounts this low, based on weather data for 2016 and 2017, wastewater permit violations could be expected to occur, on average, every 11 days.

To anticipate and limit these impacts moving forward, the City must consider best available data regarding climate change and population growth and integrate climate risk into all wastewater infrastructure and repairs.

2. The consent decree must account for how sea-level rise, increased flooding, and more intense rains will affect its wastewater infrastructure

Coastal flooding is expected to increase due to an accelerating rise in sea level and make flooding on the scale of Harvey and Imelda more common. As the Center for American Progress explained in its report on climate change's impacts on wastewater infrastructure, prepared after Hurricane Sandy:¹²²

The hazards of higher sea levels affect wastewater systems in several specific ways. First, sea-level rise increases the risk of flooding for wastewater facilities. As baseline sea levels rise, they reduce the level of intensity necessary for storm surges to destroy coastal infrastructure....

¹¹⁷ Alex Stuckey, Harvey caused sewage spills, Houston Chronicle, (Sep. 19, 2017), available at <https://www.houstonchronicle.com/news/houston-texas/houston/article/Harvey-caused-sewage-spills-12213534.php>

¹¹⁸ *Id.*

¹¹⁹ City of Houston, Press Release (Sep. 19, 2019), available at https://mailchi.mp/houstontx/spillnotice_eastexparker?e=1a59e9e012 (explaining "Intense, sustained, rainfall of greater than 9 inches in the last 24-hours resulted in the spill of [more than 100,000 gallons of] domestic wastewater at 10200 Eastex Freeway at Parker Road") (last visited Oct. 3, 2019); City of Houston, Press Release (Sep. 20, 2019), available at https://mailchi.mp/houstontx/spillnotice_eastexparker?e=1a59e9e012 (- Intense, sustained, rainfall from Tropical Storm Imelda resulted in the spill of [an estimated 275,100 gallons of] domestic wastewater at 100 North Milam Street at 700 Washington Avenue") (last visited Oct. 3, 2019).

¹²⁰ Analysis by Bayou City Waterkeeper of the City's self-reported disclosures of overflows to the TCEQ.

¹²¹ See data collected at Houston's Intercontinental airport by the National Oceanic & Atmospheric Administration here: <https://www.ncdc.noaa.gov/cdo-web/datasets/GHCND/stations/GHCND:USW00012960/detail>

¹²² Ben Bovarnick, et al, Rising Waters, Rising Threat: How Climate Change Endangers America's Neglected Wastewater Infrastructure, Center for American Progress ("Rising Waters") (Oct. 2014), available at <https://cdn.americanprogress.org/wp-content/uploads/2014/10/wastewater-report.pdf>

Rising sea levels also harm wastewater systems underground by raising coastal groundwater levels and increasing the infiltration of seawater. These impacts can reduce the overall capacity of wastewater systems, resulting in more frequent sewage overflows. They can also introduce seawater into treatment systems, impairing facilities' mechanical and biological integrity, increasing maintenance costs, and reducing system effectiveness.¹²³

Further, the report explained "climate change is projected to increase the strength of coastal storms, and such events can cause physical damage to wastewater treatment facilities across wide regions." These projections already have manifested in Houston: As we saw after Harvey, heavy rains disabled two of the City's WWTPs and destroyed a third.¹²⁴

The report further cautioned that "Inland wastewater facilities," including those in the City, "are also at risk from global warming. Increasing frequency of heavy rainfall, induced by climate change, has the potential to overwhelm wastewater systems, resulting in unintentional SSOs."¹²⁵ This prediction also has come to pass in Houston: Imelda brought two massive spills of untreated wastewater,¹²⁶ and the City's own self-reported data of SSOs attributed to wet weather, when compared to corresponding rainfall data, shows that even a half-inch to an inch of rain is enough to overwhelm its collection systems.

Indeed, with regard to Harvey, a group of climate scientists from Rice, Princeton, and European universities concluded "global warming made the precipitation about 15% (8%–19%) more intense, or equivalently made such an event three (1.5–5) times more likely,"¹²⁷ and an international consortium of climate scientists already has concluded that "the extreme rainfall and flooding caused by Tropical Storm Imelda was made more likely and intense due to global warming."¹²⁸ These are not risks the City can ignore when spending \$2 billion to repair its wastewater infrastructure.

The consent decree must integrate these risks into all wastewater infrastructure planning. The consent barely considers these issues, mentioning them only briefly in a few parts of the consent decree:

- In paragraph 10, the consent decree notes that the "sound engineering practices" the City may use to repair its systems "may include appropriate provisions of EPA's Climate Ready Water Utilities (CRWU) Initiative... and EPA's Climate Resilience Evaluation and Awareness Tool..."

¹²³ *Id.* (citing Jefferson F. Flood and Lawrence B. Cahoon, "Risks to Coastal Wastewater Collection Systems from Sea-Level Rise and Climate Change," *Journal of Coastal Research* 27(4) (2011): 652–660, available at <http://www.jcronline.org/doi/pdf/10.2112/JCOASTRES-D-10-00129.1>).

¹²⁴ Alex Stuckey, Harvey caused sewage spills, *Houston Chronicle*, (Sep. 19, 2017), available at <https://www.houstonchronicle.com/news/houston-texas/houston/article/Harvey-caused-sewage-spills-12213534.php>

¹²⁵ *Rising Waters*, at 4 (citing U.S. Global Change Research Program, National Climate Assessment: Extreme Weather, available at <http://nca2014.globalchange.gov/highlights/report-findings/extreme-weather#narrative-page-20985>)

¹²⁶ City of Houston, Press Release (Sep. 19, 2019), available at https://mailchi.mp/houstontx/spillnotice_eastexparker?e=1a59e9e012 (explaining "Intense, sustained, rainfall of greater than 9 inches in the last 24-hours resulted in the spill of [more than 100,000 gallons of] domestic wastewater at 10200 Eastex Freeway at Parker Road") (last visited Oct. 3, 2019); City of Houston, Press Release (Sep. 20, 2019), available at https://mailchi.mp/houstontx/spillnotice_eastexparker?e=1a59e9e012 (- Intense, sustained, rainfall from Tropical Storm Imelda resulted in the spill of [an estimated 275,100 gallons of] domestic wastewater at 100 North Milam Street at 700 Washington Avenue") (last visited Oct. 3, 2019).

¹²⁷ Geert Jan van Oldenborgh, et al, Attribution of extreme rainfall from Hurricane Harvey, August 2017, 2017 *Environ. Res. Lett.* 12 124009 (Jan. 9, 2018), available at <https://iopscience.iop.org/article/10.1088/1748-9326/aa9ef2/pdf>

¹²⁸ World Weather Attribution, Rapid attribution of the extreme rainfall in Texas from Tropical Storm Imelda, <https://www.worldweatherattribution.org/rapid-attribution-of-the-extreme-rainfall-in-texas-from-tropical-storm-imelda/> (last visited Oct. 2, 2019).

- In paragraph 43(b), the consent decree requires the City to implement and Advanced Infrastructure Analytics Platform, which will “include statistical analytical results from the wastewater infrastructure models with SCADA, level monitoring, flow monitoring, and rainfall data.”
- Appendix D explains the consent decree’s prioritization framework for sequencing repairs to lift stations and includes location in a floodway as a factor, without defining what metric for determining that floodway will be used.

While the consent decree references the EPA’s CRWU and CREAT tools, the consent decree merely says that work to accomplish remedial measures under the consent decree must be performed using “sound engineering practices” and includes within that definition “appropriate provisions” under the two resources just mentioned.

This is too vague to ensure the City actually will integrate these practices into its own infrastructure planning. The consent decree must be clearer and specifically require the City to integrate climate risk into every aspect of its wastewater planning and direct the city to prioritize specific strategies outlined under CRWU and CREAT, including but not limited to:

- Improving community engagement,
- Modeling of all kinds - modeling of extreme precipitation events, runoff, changes in water quality, and energy demand, and sewer flow to reduce inflow/infiltration,
- Integrating flood management and modeling into land use planning,
- Relocating facilities out of the floodplain,
- Using green infrastructure (repeatedly recommended by CRWU as an appropriate strategy for making wastewater infrastructure more xf),
- Using other nature-based solutions,
- Integrating long-term risks into capital improvement plans, and
- Implementing cogeneration technology.

Further, the consent decree must be modified to require the City to use the best available data regarding projected rainfall, flooding, and sea-level rise. In Annual Reports, the City must explain what data it used and identify any changes that must take place in its long-term planning to account for changes in flooding, sea-level rise, and rainfall projects.

3. The consent decree must account for wastewater infrastructure’s impacts on public health over the long-term

The damaging impacts of climate change—including sea-level rise, extreme weather, and increased rainfall, as well as drought—on wastewater treatment systems present a major public health risk. When excessive rainfall and flooding overwhelm sewer systems, it can force untreated sewage and wastewater to flow out of sanitary sewer systems into local communities, damaging property and threatening public health by leaking into homes and contaminating groundwater.¹²⁹ When the public is exposed to contaminants in untreated wastewater—such as viruses, bacteria, worms, and toxic chemicals—individuals can be subject to respiratory, skin, and intestinal infections; illnesses such as the stomach flu; and more serious diseases such as cholera and dysentery.¹³⁰

¹²⁹ Rising Waters, at 8 (citing U.S. Environmental Protection Agency, Sanitary Sewer Overflows and Peak Flows)

¹³⁰ U.S. Environmental Protection Agency, Why Control Sanitary Sewer Overflows?, available at https://www3.epa.gov/npdes/pubs/sso_casestudy_control.pdf

Harvey spilled nearly 31.6 million gallons of raw sewage across southeast Texas,¹³¹ and excluding Harvey, from 2013-2018, Houston's wastewater systems became overburdened repeatedly during storms and released more than 15 million gallons of untreated wastewater into local waterways and neighborhoods.¹³² More recently, in less than a day during Imelda, more than 375,000 gallons of untreated wastewater escaped the City's sewer system.¹³³

These spills pose an obvious risk to public health. Less than a month after Harvey, Rice University's Kinder Institute for Urban Research reported that in some cases, *E. coli* levels in Houston's bayous were more than 57 times above the acceptable limit.¹³⁴ Another group of researchers at Rice University found that as a result of damage to the City's wastewater systems from flooding, *E. coli* levels and antibiotic-resistance gene levels in two of Houston's major bayous were significantly elevated in the immediate aftermath of Harvey.¹³⁵ The report advised: "Flooding is expected to become more frequent due to a combination of global climate change and the expansion of coastal cities.... there is an urgent need not only to investigate the overall impacts of Hurricane Harvey on public flooded areas in Houston but also to characterize the pathogenic microbial profile and antibiotic resistance in representative samples from flooded residential communities."¹³⁶

The consent decree must require the City to address these risks, including by:

- Creating a plan for moving wastewater treatment plants out of the floodplain,
- Prioritizing repairs to wastewater infrastructure that cannot be moved out of the floodplain,
- Requiring additional monitoring of wastewater infrastructure during and after periods of heavy rain,
- Requiring additional monitoring of sites following periods of heavy rain,
- Notifying the public of the risks of coming into contact with contaminated water before anticipated periods of heavy rain and after periods of heavy rain.

4. The consent decree must account for increased peak flow from population growth

The consent decree should require the City to achieve adequate collection system capacity and peak flow management that account for climate and population projections. The consent decree should be revised to account for likely changes to the collection system capacity due to increases in population using the system and increased precipitation caused by climate change.

¹³¹ Alex Stuckey, Harvey caused sewage spills, Houston Chronicle, (Sep. 19, 2017), available at <https://www.houstonchronicle.com/news/houston-texas/houston/article/Harvey-caused-sewage-spills-12213534.php>

¹³² Analysis by Bayou City Waterkeeper of the City's self-reported disclosures of overflows to the TCEQ.

¹³³ City of Houston, Press Release (Sep. 19, 2019), available at https://mailchi.mp/houstontx/spillnotice_eastexparker?e=1a59e9e012 (explaining "Intense, sustained, rainfall of greater than 9 inches in the last 24-hours resulted in the spill of [more than 100,000 gallons of] domestic wastewater at 10200 Eastex Freeway at Parker Road") (last visited Oct. 3, 2019); City of Houston, Press Release (Sep. 20, 2019), available at https://mailchi.mp/houstontx/spillnotice_eastexparker?e=1a59e9e012 (- Intense, sustained, rainfall from Tropical Storm Imelda resulted in the spill of [an estimated 275,100 gallons of] domestic wastewater at 100 North Milam Street at 700 Washington Avenue") (last visited Oct. 3, 2019).

¹³⁴ Kinder Institute for Urban Research, Rice University, *E. coli* Levels Up (Way Up) After Harvey (Sep. 21, 2017), <https://kinder.rice.edu/2017/09/21/e-coli-levels-up>

¹³⁵ Pingfeng Yu, et al, Elevated Levels of Pathogenic Indicator Bacteria and Antibiotic Resistance Genes after Hurricane Harvey's Flooding in Houston, *Environmental Science & Technology Letters* 2018 5 (8), 481-486 (July 23, 2018), available at <https://cpb-us-e1.wpmucdn.com/blogs.rice.edu/dist/3/1390/files/2012/02/266-2jxakx9.pdf>

¹³⁶ *Id.*

Currently, the consent decree does not require the City to evaluate peak flow and instead seems to default to the peak flow conditions of its TPDES permits.¹³⁷ The consent decree must require the City to evaluate peak flow conditions and attain sufficient hydraulic capacity and peak flow management as identified by the required evaluation.

The consent decree should also be revised to require hydraulic capacity and management of peak flows for a period of time that corresponds to the anticipated lifetime of required new, rehabilitated, and upgraded sewer infrastructure.¹³⁸ In doing so, the required evaluation should account for increases in the quantity and intensity of precipitation associated with climate change and the increase in regional population of potential sewer users.

The consent decree should require the City to factor in both observed increases in extreme precipitation events since 1910 and projected increases in precipitation amounts and intensity as a result of climate change in its evaluation to determine sufficient hydraulic capacity and management of peak flows for future, projected conditions beyond the life of the consent decree.¹³⁹ Unless accounted for in advance, increased quantity and intensity of precipitation will increase the frequency and magnitude of wet-weather SSOs and more rapidly degrade the collection system.

Precipitation conditions will change significantly beyond the life of the consent decree and over the anticipated lifespan of wastewater infrastructure. Climate scientists have concluded precipitation during storms like Harvey and Imelda has become more intense due to global warming.¹⁴⁰ It is projected that extreme rain events like these will become the norm in Houston over the next century.¹⁴¹ To make sure the City spends \$2 billion in a way that accounts for these expected changes, the consent decree must require that the rehabilitation and upgrading of the collection system's hydraulic capacity is both sustainable and cost-effective over the projected lifetime of the sewer infrastructure.

The consent decree must also require the City to factor in future, projected population conditions beyond 2030 in its evaluation to determine sufficient hydraulic capacity and management of peak flows. As of 2018, the U.S. Census estimated Houston's population at more than 2.3 million,¹⁴² and according to the 2010 US Census, the broader Houston region had 5.8 million residents. By 2040 the

¹³⁷ See *generally* Draft Consent Decree.

¹³⁸ Sanitary sewer infrastructure, with preventative maintenance, can last for decades before requiring replacement. See, e.g., U.S. Department of Housing and Urban Development, Residential Rehabilitation Inspection Guide, Appendix C page C-3 (cast-iron sewer pipes have an expected lifetime of 75 to 100 years), available at <https://www.huduser.gov/portal/Publications/PDF/rehabinspect.pdf>.

¹³⁹ See David Easterling et al., Climate Extremes: Observations, Modeling, and Impacts, *Science* 22 Sep 2000: Vol. 289, Issue 5487, pp. 2068-2074, available at

<http://science.sciencemag.org/content/289/5487/2068.full>; Intergovernmental Panel on Climate Change, IPCC Fourth Assessment Report: Climate Change 2007: Working Group I: The Physical Science Basis - 11.5.3.2 Precipitation, available at https://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch11s11-5-3-2.html.

¹⁴⁰ Geert Jan van Oldenborgh, et al, Attribution of extreme rainfall from Hurricane Harvey, August 2017, 2017 *Environ. Res. Lett.* 12 124009 (Jan. 9, 2018), available at <https://iopscience.iop.org/article/10.1088/1748-9326/aa9ef2/pdf>; World Weather Attribution, Rapid attribution of the extreme rainfall in Texas from Tropical Storm Imelda, <https://www.worldweatherattribution.org/rapid-attribution-of-the-extreme-rainfall-in-texas-from-tropical-storm-imelda/> (last visited Oct. 2, 2019).

¹⁴¹ A Climate for Resilience: Houston, We've Had a Problem, U.S. Climate Resilience Toolkit, <https://toolkit.climate.gov/case-studies/climate-resilience> ("Continued extreme precipitation events, as well as increased risk of drought due to higher temperatures, are also projected.") (last visited Oct. 2, 2019).

¹⁴² U.S. Census Bureau, QuickFacts: Houston, Texas, <https://www.census.gov/quickfacts/fact/table/houstoncitytexas/PST045218> (last visited Oct. 2, 2019).

region is expected to have 10 million residents, a portion of which will be served by the City's wastewater collection and treatment systems.

Currently, the only mention of population in the draft consent decree is this statement in a "Whereas" clause: "The City contends that it has been working to implement improvements to its massive system to try to keep pace with its rapidly growing population..." This falls short.

Increases in population will put a strain on the hydraulic capacity and effective management of peak flows unless the population increases are properly accounted for in the engineering to rehabilitate and upgrade the collection system's hydraulic capacity. If demand by future sewer users exceeds hydraulic capacity of a rehabilitated and upgraded collection system, then SSOs will continue to pollute Houston's waterways. The consent decree must require that the rehabilitation and upgrading of the collection system's hydraulic capacity is both sustainable and cost-effective over the projected lifetime of the sewer infrastructure.

VIII. Community Engagement

1. The 40 years, the EPA has recognized the importance of the public's input to wastewater management decisions

As early as 1979, EPA recognized that "community involvement in planning for sewage treatment facilities would result in cleaner water at lower ultimate cost."¹⁴³ The EPA advised:

Only careful public scrutiny can ensure:

- that sewage treatment planning meets the present and future needs of the community;
- that all the relevant environmental, economic, and political data necessary to ensure effective implementation emerge;
- that appropriate measures are taken to mitigate negative impacts; and
- that a community develops a commitment to continued oversight of the operation and maintenance of the facility.

More recently, in EPA's Office of Wastewater Management's 2017 report, "Prioritizing Wastewater and Stormwater Projects Using Stakeholder Input," the EPA emphasized the value of community input in prioritizing wastewater projects: "It is critical to engage representative stakeholders."¹⁴⁴ To that end, "EPA encourages communities to give stakeholders appropriate opportunities for meaningful input during the identification, evaluation and selection of alternatives."

And the 2017 EPA-funded "Effective Utility Management: A Primer for Water and Wastewater Utilities" identifies "stakeholder understanding and support" as one of "ten attributes of effectively managed wastewater utilities."¹⁴⁵ In engaging stakeholders, the report explains that an effectively managed utility "[e]ngenders understanding and support from stakeholders (anyone who can affect or be affected by the utility), including customers... [and] community and watershed interests..." and "[a]ctively engages in partnerships" and "involves stakeholders in the decisions that will affect them."

¹⁴³ EPA, Municipal Wastewater Management, Public Involvement Activities Guide, at v, EPA-430/9-79-005 (Feb. 1979).

¹⁴⁴ EPA, Office of Wastewater Management, Prioritizing Wastewater and Stormwater Projects Using Stakeholder Input, at 2, 5, EPA 830-R-17-002 (Aug. 2017).

¹⁴⁵ Effective Utility Management: A Primer for Water and Wastewater Utilities, at 5 (Jan. 2017), available at <https://nepis.epa.gov/Exe/ZyPDF.cgi/P100WIZA.PDF?Dockey=P100WIZA.PDF>

In the enforcement context, EPA has identified as a goal: “Strengthen communication so enforcement cases can benefit from the knowledge of local communities, and empower communities with information about pollution and violations that affect them.”¹⁴⁶

2. Houston has received low marks for engaging its residents

Houston consistently falls short when it comes to engaging its residents. In 2018, the Kinder Institute for Urban Research at Rice University assessed Houston’s civic health and concluded Houston “tends to lag behind other large metro areas in terms of civic health.”¹⁴⁷ By all measures, including civic involvement, the report stated, Houston “ranks on average 36th out of the 50 largest metropolitan areas in the country.” With respect to “traditionally marginalized populations, including non-white residents, less educated residents, and the foreign-born,” the report concluded:

social connectedness, civic involvement, and political participation all tend to be lower... compared to more advantaged groups such as those who are Anglo (non-Hispanic white), better educated residents, and native-born citizens... Houston continues to grapple with its history of racial segregation and discrimination, the growing concentrations of poverty, and the challenge to ensure that all residents can meaningfully participate in civic life.¹⁴⁸

The report cautioned “Solving large-scale community problems often requires political action. Equal political participation is important in securing civic health. Without it, community problems risk being solved in an inequitable way.”¹⁴⁹

This concern has borne out in the context of the City’s wastewater infrastructure. In 2016, the Houston Chronicle’s analysis found “The neighborhoods most likely to feel the consequences of Houston’s long-running struggle with sewer overflows are disproportionately home to low-income and minority residents....”¹⁵⁰

3. The City has not minimally engaged residents in drafting the consent decree

The City made no effort to engage with communities in drafting the consent decree and repeatedly opposed the involvement of Bayou City Waterkeeper in the negotiation of the consent decree’s basic terms. When the City announced the consent decree was final, the Mayor planned to put the consent decree on the agenda for a vote without releasing a copy to the public. Houston Public Media reported that City Council Members were subject to a punitive “secrecy clause” that prevented them from sharing any information about the consent decree with the public.¹⁵¹

¹⁴⁶ EJ 2020 Action Agenda: The US EPA’s Environmental Justice Strategic Plan for 2016-2020, at 3, https://www.epa.gov/sites/production/files/2016-05/documents/052216_ej_2020_strategic_plan_final_0.pdf

¹⁴⁷ 2018 Houston Civic Health Index at 5, Kinder Institute for Urban Research, Rice University, available at <https://kinder.rice.edu/sites/g/files/bxs1676/f/documents/2018%20Houston%20Civic%20Health%20Index.pdf>. The report defines “civic health” as “the way that communities are organized to define and address public problems. Communities with strong indicators of civic health have higher employment rates, stronger schools, better physical health, and more responsive governments.”

¹⁴⁸ *Id.*

¹⁴⁹ *Id.* at 18.

¹⁵⁰ Mike Morris, Sewer spills put city under EPA scrutiny, Houston Chronicle (Aug. 27, 2016), <https://www.houstonchronicle.com/news/houston-texas/houston/article/Sewer-spills-put-city-under-EPA-scrutiny-9188683.php>.

¹⁵¹ Jen Rice, ‘Secrecy Provision’ Prevented Public Input On Houston’s \$2 Billion Deal To Fix Sewers, Houston Public Media (July 16, 2019),

Only after more than 50 groups and individuals voiced their concerns that the City Council was moving forward with approving the settlement without releasing the draft to the public or offering any opportunities for public comment, the Mayor released a copy to the public but delayed the Council's vote by only a week. Despite the short turnaround, Bayou City Waterkeeper, with the support of other organizations, presented Council with a plan for community engagement, but the Council approved the consent decree without any changes.

In our most recent communication from the City regarding public engagement so far, City Attorney Ron Lewis claimed the City adequately consulted with the public and cited to July Council meetings described in the paragraphs above and actions taking place after the City Council's approval of the consent decree, including the federal comment period and the City's presentations to the Water Environmental Association of Texas (with a minimum ticket price of \$75) and the Black Chamber of Commerce (an event which was not advertised on the Chamber's website or facebook page).

4. Despite the value of community engagement to wastewater decisions and the City's public engagement shortfalls, the consent decree is silent with regard to community engagement

Despite this well-known shortfall, a single sentence in the consent decree contemplates public participation, through this comment period: "This Consent Decree shall be lodged with the Court for a period of not less than 30 Days for public notice and comment in accordance with 28 C.F.R. § 50.7 and TWC § 7.110."¹⁵² The consent decree imposes no independent requirements on the City for community engagement, and the City engaged in no community outreach before voting to approve the consent decree on July 24, 2019.

In comparison, other local government resolving wastewater issues through consent decrees contemplated comparably more robust community engagement both before and after the consent decree was final. A good example is Allegheny County Sewer Authority, which has a modified consent decree currently open for comment. That consent decree requires the creation of a public participation plan—meeting certain requirements that are spelled out in the consent decree—within six months. Other examples include the [Metropolitan St. Louis Sewer District](#), the [DC Suburbs' Sewage District](#), the [Metropolitan Water Reclamation District of Greater Chicago](#), and [Delaware County](#), as well as the Cities of [Cincinnati](#), [Baltimore](#), [Atlanta](#), [Chattanooga](#), [Louisville](#), and [Nashville](#).

At a minimum, the City must be required to create a plan for participation moving forward. For proposed language, see paragraph 6 below.

5. The consent decree must require community engagement moving forward by creating and empowering a Community Wastewater Committee

To require community engagement over the 15-year life of the consent decree, we recommend that the consent decree provide for the creation and support of a **Community Wastewater Committee** (CWC), made up of residents affected by sewer overflows and back-ups, civic and non-profit organizations, academics (including engineers with wastewater management and stormwater control experience), and members of city government. To enhance the City's efforts to comply with the Clean Water Act, we recommend that the CWC may give input about how to address community concerns

<https://www.houstonpublicmedia.org/articles/news/2019/07/16/339729/secretcy-provision-blocks-public-input-on-houstons-2-billion-deal-to-fix-sewers/>

¹⁵² Consent Decree, ¶ 138.

going beyond the consent decree's terms, such as suggestions for reducing and offsetting water rates, using green infrastructure, strategically investing in next-generation wastewater improvements to reduce energy consumption, contributions to climate change, and costs; and funding.¹⁵³ To facilitate communication with and information-sharing by the City, we recommend that the CWC meet quarterly and liaison with community groups and the Public Works Department about the City's ongoing compliance with the consent decree and Clean Water Act. The Public Works Department, in turn, will update the CWC on the city's compliance with the consent decree.

Other cities with similar community-based wastewater advisory committees include the Washington D.C. Suburbs Sewer District's [stakeholder advisory panel](#) (p.315 of PDF), Los Angeles' [Stakeholder Advisory Group](#) on water issues, Portland, Oregon's [Citizens Advisory Committee](#), and the community steering committee contemplated by Cincinnati's [consent decree](#) (p. 119 of PDF).

For proposed language, see paragraph 6 immediately below.

6. The Annual Reports required under the consent decree must be shared with the public through a summary "State of the Water" report and public forum

The consent decree requires Annual Reports to be submitted to the EPA for review and comment, with a copy being provided to the TCEQ, before being shared with the public.¹⁵⁴

The consent decree must be modified to make sure this information is shared with the public in an annual "State of the Water" report and public forum, which should, at a minimum, cover upgrades to wastewater infrastructure and updates on local water quality.¹⁵⁵ To ensure that the public has notice of these meetings and can participate in them in a meaningful way, the City should be required to provide 30-day public notice of the date, time, and location prior to each annual forum through specified means that include press releases and emails to interested individuals, community groups, and environmental organizations, among other stakeholders.

In addition, at least 30 days before each annual public forum, the City should be required to post online all reporting already required under sections V and IX of the consent decree and additional reporting recommended in this comment letter. The public notice for the forums should provide information on the availability of these reports and where exactly they may be accessed online. Finally, the City should be required to receive questions in advance of the public forum and include a question-and-answer period of up to two hours during each forum.

To make the report and forum accessible to Houstonians who do not speak English, the City should translate the report into Spanish, Vietnamese, and Mandarin and provide interpretation services at the annual forum in those same languages. Bayou City Initiative, a local non-profit organization, recently hosted a sold-out "State of the Infrastructure" forum in which some of these issues were addressed by Carol Haddock, the City's Director of Public Works. This not only shows that the public has an interest

¹⁵³ For example, the Washington D.C. Suburbs Sewer District's [first amended consent decree](#) describes the efforts already undertaken by a stakeholder advisory panel on p. 315 of the PDF; Cincinnati's [consent decree](#) contemplates the creation of a community steering committee on p. 119 of PDF.

¹⁵⁴ Draft Consent Decree ¶ 62.

¹⁵⁵ As an example, Baltimore's consent decree (p. 59 of PDF, ¶ 28(a), available at <https://publicworks.baltimorecity.gov/sites/default/files/Modified%20Consent%20Decree.pdf>) requires it to hold annual forums to "inform the public of work achieved under the Consent Decree in the prior 12-month period... to facilitate community engagement."

in receiving this sort of information, but gives the City with a model for how to structure this forum. A video of this forum is available here:

<https://www.facebook.com/bayoucityinitiative/videos/643262332828550/>.

The annual reports prepared by Louisville to comply with its consent decree obligations offer one model that the City could follow.¹⁵⁶ To address the recommendations in paragraphs 4-6 above, Bayou City Waterkeeper recommends the following language be added to the “Public Participation” section of the consent decree:

§	Proposed language
XXIII	<p>139. Public Participation Plan. Within three months from the Effective Date, the City shall develop a “Public Participation Plan” to ensure that the public served by the WCTS is actively involved in the development of Deliverables under the consent decree and promote community engagement over the duration of the consent decree.</p> <p>140. Content of Public Participation Plan. The City shall include in its Public Participation Plan (a) proposed activities for providing the public with notice and information regarding the development of projects and plans under the consent decree and its Deliverables, including any goals, the types of remedial controls and remedial activities available and being considered, the process for evaluating the various remedial controls and remedial activities under the consent decree, and informal opportunities to ask questions about and comment on the various remedial controls and remedial activities under the consent decree; (b) the creation, structure, and operations of a Community Wastewater Committee, described below; and (c) a plan for consistent, periodic public outreach, including an initial workshop and annual State of the Wastewater meeting and report.</p> <p>141. Community Wastewater Committee. The purpose of the Community Wastewater Committee will be to maximize opportunities for community engagement, to provide guidance to the City throughout the consent decree process, and to improve the City’s long-term ability to comply with the Clean Water Act and Texas Water Code.</p> <p style="padding-left: 40px;">a. Members.</p> <p style="padding-left: 80px;">i. The Community Wastewater Committee will be composed of:</p> <ol style="list-style-type: none"> 1. At least one resident of, or representative of civic organizations active in, the areas identified in Appendix C or identified by the City, BCWK, and/or the Community Wastewater Committee; 2. The plaintiff-intervenor BCWK; 3. At least two and up to five representatives of local non-profit organizations whose missions focus on environmental, equity, resilience, and/or civic engagement in the greater Houston area; 4. Professors or postdoctoral fellows with a background in wastewater infrastructure, civil or environmental engineering, or urban planning or similar area of expertise affiliated with a college or university in the greater Houston area;

¹⁵⁶ Louisville Municipal Sewer District, Annual Report for FY2017, available at <http://louisvillemisd.org/sites/default/files/inline-files/MSD%20CAFR%202017web.pdf>.

5. The City's Director of Public Works or their representative;
 6. A representative of the Houston Health Department;
 7. The Chair of the City Council's Technology, Transportation, and Infrastructure Committee or their representative.
- ii. Upon convening, this Committee may establish rules of governance, including rules that allow for representatives of additional organizations, neighborhoods, or stakeholders. Although they will not be members of the Community Wastewater Committee, the TCEQ and EPA will be invited to attend all Community Wastewater Committee meetings.
- b. Operations. The Community Wastewater Committee will give the City and its departments advice through an informal process. The Committee's focus will be on "big picture" issues relating to the City's compliance with the consent decree. Though the Committee will not provide detailed advice regarding the technical minutiae of consent decree compliance, they may identify opportunities and funding sources for technological and infrastructure upgrades. The City and its consultants will answer any questions the Committee has about the technical details of Deliverables and work under the consent decree.
 - c. At a minimum, the Community Wastewater Committee will provide high-level guidance to the City and the Public Works Department in complying with the terms of the consent decree, including all planning and reporting required under the consent decree, and the Clean Water Act. The Committee also will give Public Works recommendations for how to address community concerns, including recommendations for offsetting rate increases, additional wastewater improvements needed to reduce system failures, opportunities for the development of green infrastructure projects; and potential funding sources for additional wastewater improvements and green infrastructure projects.
 - d. At the outset of the process, the City will convene the Community Wastewater Committee within six months of the Effective Date. At its initial session, the City will present to the Committee a "road map" of the consent decree process. At a minimum, this initial session will cover: 1) the history of the City's efforts to address its overflow problems; 2) the regulatory context in which the consent decree has arisen; 3) the possible causes and contributing factors that could be leading to the continued overflow problems; 4) a detailed explanation of the planned Early Action Projects; and 5) a brief explanation of other planned projects and deliverables under the consent decree. In the latter portion of this session, the City will take questions and comments from the Community Wastewater Committee members regarding its plan for compliance with the consent decree.
 - e. The Public Works Department will update the Committee on the city's compliance with the consent decree on at least a quarterly basis.
 - f. The Houston Health Department will update the Committee on water quality on at least a quarterly basis.

142. Initial Public Outreach.

- a. The first step in the public outreach process will be an effort to educate the public generally about the consent decree, sewer overflows and back-ups, the role of the

Community Wastewater Committee, and the range of alternatives available for addressing sewer overflows and back-ups.

- b. Within six months of the Effective Date, the City will distribute press releases to print, electronic, and broadcast outlets to introduce the consent decree and Community Wastewater Committee and invite citizens to contact the City by letter, phone, or email to request an information packet on the consent decree. The City will make the information packet available on its website, together with documents in the repository described in ¶ 59. In these communications and on its website, the City will announce the date and time for an initial consent decree public workshop.
- c. In an effort to reach customers without internet access, the City also will share this information through quarterly mailers in customer utility bills.
- d. The information packet described in (b) will be developed with input from BCWK and/or the Community Wastewater Committee and contain a short overview of the final consent decree as it relates to sewer overflows and back-ups; contain an anonymous questionnaire that will solicit citizens' views regarding sewer overflow and back-up issues; and invite recipients to visit the City's consent decree website and/or to attend the initial public workshop described below. The information packet will be distributed to community leaders, including representatives from the Super Neighborhood Alliance, watershed associations (e.g., Brays Bayou Association), organizations who have previously participated and/or have submitted letters related to the consent decree, and other organizations and non-profit organizations, identified by the City, BCWK, and/or Community Wastewater Committee, who would benefit from participating in this process. Copies of the information packet will be made available at Multi Service Centers and local libraries, as well as at Public Works information booths at various public events, such as Earth Day.
- e. The location and time of the initial public workshop will be chosen to facilitate attendance by the public, particularly those in the communities surrounding the areas identified in Appendix C. The initial public workshop may take place as part of another meeting that will attract members of the public, such as a CIP meeting.
- f. This initial workshop will seek to educate members of the public about the issues outlined above: 1) the history of the City's efforts to reduce sanitary sewer overflows; 2) the regulatory context in which the consent decree has arisen; 3) the possible causes and contributing factors that could be leading to the continued overflow problems; 4) Early Action Projects; 5) other planned projects and deliverables under the consent decree; 6) opportunities for learning more about the City's progress in reducing SSOs and complying with the consent decree; 7) information about offsetting rate increases; 8) the role of various City departments in addressing sewer overflows and back-ups, including the Public Works Department and Houston Health Department; 9) the role of the Community Wastewater Committee.
- g. Technical issues and remedial alternatives will be presented in a simple, concise manner that is understandable to laypersons. The presentations will address progress to date on the consent decree, as well as the status of ongoing and planned consent decree activities. Charts and maps explaining in layperson's terms

	<p>the causes and effects of sewer overflows and back-ups across the City, as well as the City's efforts to address them, will be on display for viewing by the public at the workshop site before, during, and after the workshop session. Interpretation will be available for Spanish, Vietnamese, and Mandarin speakers.</p> <p>143. State of the Water Address & Report. After holding the initial public workshop, each year thereafter, the Public Works Department and the Houston Health Department will co-host a meeting to update the public on the State of Water Infrastructure & Water Quality and the city's progress in complying with the consent decree. Notice of the meeting will be published in the same manner described in ¶ 142(a) and (b) above. The address and report will include easy-to-understand metrics about the city's progress in completing projects under the consent decree and reducing sanitary sewer overflows, as well as information about where the city has fallen short. The meeting will be broadcast through a recorded, live webinar, so community members unable to attend in person can access the information conveniently. The Mayor will be required to attend.</p>
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7. The consent decree should include reporting on additional topics

Bayou City Waterkeeper has several additional recommendations for how the consent decree may improve the dissemination of information to and involvement by the public:

First, Houston residents have expressed frustration with the lack of information about how the consent decree may affect their sewer rates. Over the last 30 years, the City has spent more than \$3 billion on sewage upgrade projects without achieving compliance with the Clean Water Act or adequately reporting to the public how much work it has completed and what was spent on the endeavor. To address these concerns, the City should be required to post online an annual financial report with an accounting of the funds it has raised for consent decree work and a detailed list of the City's financial expenditures on that work over the previous 12 months. The reports should identify the specific companies that received money as contractors and the amount, date, and purpose of each payment. The City must also report on financial expenditures for consent decree projects to date and to file annual financial expenditures reports going forward.

Second, the City should be required to give the public a progress report on annual infrastructure projects. The City should be required to post online annual summary reports describing and summarizing, in clear, non-technical language that members of the public can easily understand, the infrastructure projects that the City has completed over the previous year pursuant to the consent decree. These reports should include, at a minimum:

- the number of miles of pipes rehabilitated, upgraded, or replaced, both in the previous year and cumulatively since the entry of the consent decree;
- the number of miles of pipes that still remain to be rehabilitated, upgraded or replaced before the deadlines listed in the consent decree;
- maps showing the location of pipes replaced and other work performed, and the location of pipes not yet rehabilitated, upgraded or replaced; and
- maps showing the location of both wet- and dry-weather SSOs, SSO structures, and sewer backups, which indicate the status of the City's effort to eliminate or prevent their occurrence.

Third, the City should be required to provide annual reports to the public on its efforts to comply with recommended measures to address sewer backups. The City should be required to post online an annual report of measures undertaken and progress made to comply with its SSO Response Plan. This report should include the number, location, and date of each complaint about a sewer backup, and data for the City's response, including cleanup efforts and response times, pursuant to the Response Plan.

Fourth, at a minimum, as discussed above, the City must understand how its wastewater problems disproportionately impact low-income communities and communities of color and integrate its findings into its planning and prioritization framework. The City should be required to assess and report on environmental justice aspects of its wastewater problems, including historic inequities and/or impacts on environmental justice communities; assess whether the current projects under the consent decree address historic inequities and/or environmental justice concerns; propose projects or other plans to account for historic inequities and/or environmental justice concerns. See Section VI above.

8. The public should have a chance to review and comment on plans required by the consent decree

The consent decree currently requires the following reports to be submitted to the EPA for "review and approval" and allow the EPA to provide written comments: The Capacity Remedial Measures Plan(s), the TCEQ Letter of Authorization request, the WWF Pilot Testing Result Report, the WWF Full Scale Treatment Plans, the Scott Street WWF Remedial Measures Plan, the Northside WWF Remedial Measures Plan, and the CMOM Program Plan. Despite purportedly being necessary for the City to achieve compliance with the Clean Water Act, these reports are not subject to any forum of public comment or approval by the Court.

These reports should be subject to public review and comment over a 60-day comment period to give communities affected by these plans, as well as environmental and other community-based organizations like Bayou City Waterkeeper, the opportunity to weigh in. As noted elsewhere in this comment letter, public health concerns about the City's failure to address this problem previously and ongoing equity concerns weigh in favor of allowing more robust opportunities for public participation in the development of plans that are essential to the implementation of the consent decree.

Other federal consent decrees to resolve sewer overflows require some form of public review or comment. These other federal consent decrees either (1) include required plans for management programs and other remedial measures as appendices to or provisions within the consent decree, which subject these plans to public review and comment before entry with the court for approval,¹⁵⁷ or (2) require a period of public review and comment before the plan is submitted by the defendant for review and approval by the plaintiff parties, if the federal consent decree included provisions for the development of a plan for a program or measure, or if there was no program prior to the consent

¹⁵⁷ See, e.g., Consent Decree, *United States, et al v. Bd. of Cty. Comm'rs & City of Cincinnati* (No. C-1-02-107, S.D. Ohio, June 9, 2004), available at <https://www.epa.gov/sites/production/files/2014-09/documents/hamilton-cd2.pdf>; Appendix D, Consent Decree, *United States & South Carolina v. City of Columbia* (No. 3:13-2429-TLW, D.S.C., Sept. 9, 2013) available at https://www.epa.gov/sites/production/files/2013-09/documents/columbia-cd_0.pdf

decree.¹⁵⁸ The long time period that the City has been out of compliance, and the very high number of reported overflows, warrants this level of public scrutiny.

9. The public should receive notice of SSOs, which also must be mapped

To enhance existing notification requirements under Texas Administrative Code § 319.302, the consent decree should require the City to disclose all sanitary sewer overflows and other unpermitted discharges on a real-time basis on its website. These should be posted on an interactive map¹⁵⁹ and accompanied by public health advisories when needed. The City's website must allow users to subscribe to these overflow alerts.¹⁶⁰

The Public Works Department must also issue press releases and post updates to its social media accounts when these overflows/discharges occur and provide notice to the media any time (1) the discharges exceed or are likely to exceed 10,000 gallons total, including any intentional releases,¹⁶¹ or (2) the discharges have caused or are likely to cause an adverse impact on water quality.

The consent decree should also require the City to install temporary warning signs along waterways and parks used by the public when levels of fecal bacteria exceed amounts considered safe by EPA or the TCEQ for limited contact water recreation.

To illustrate why this is important, the City has identified several locations facing capacity constraints in Appendix C and collectively reported millions of gallons of wastewater spilled at the locations during storms over the last five years. These locations are near parks and waterways used by the public for recreation and in some cases, by elementary schools, like Appendix C "Area 2," which is on the boundary of Woodland Park, a popular park in central Houston in which people and their dogs regularly walk through the site of these overflows, and "Area 6," which is next to J.P. Henderson Elementary School. It is of vital importance to public health to notify the public at the physical location of overflows. This also presents an environmental justice issue; J.P. Henderson's students are mostly Hispanic children from economically disadvantaged backgrounds.¹⁶²

The posting of these signs should follow these minimum requirements:

- Posted within 24 hours of the City's receipt of notice of a sewage discharge that is likely to threaten human health if people come in contact with the water;
- Located near the contaminated waterway in a place where it is easily visible; and

¹⁵⁸ See, e.g., Appendix 4, Consent Decree, *United States v. City of Akron & Ohio* (No. 5:09-cv-00272, N.D. Ohio, Nov. 13, 2009) available at <https://www.epa.gov/sites/production/files/documents/cityofakron-cd.pdf>; Consent Decree at 65, Section VI., *United States & South Carolina v. City of Columbia* (No. 3:13-2429-TLW, D.S.C., Sept. 9, 2013) available at https://www.epa.gov/sites/production/files/2013-09/documents/columbia-cd_0.pdf; Consent Decree at 7-8, Section VI.9., *United States & Mississippi v. City of Greenville* (No. 4:16-cv-00018-DMB-JMV, N.D. Miss., Jan. 28, 2016) available at <https://www.epa.gov/sites/production/files/2016-02/documents/greenvillepartial-cd.pdf>.

¹⁵⁹ California EPA, State Water Resources Control Board, Sanitary Sewer Overflow (SSO) Incident Map https://www.waterboards.ca.gov/water_issues/programs/sso/sso_map/sso_pub.shtml (last visited Oct. 2, 2019).

¹⁶⁰ For one example, see the Overflow Advisory Level on the website associated with Louisville's consent decree and wastewater improvements at <http://msdprojectwin.org/>.

¹⁶¹ According to the City's self-reported data, 132 discharges topped 10,000 gallons in 2017; 285 in 2016 (not including most of January and February due to incomplete data); 115 in 2015; 50 in 2014; 16 in 2013; and 13 in 2012.

¹⁶² See Henderson J. Elementary School, Student Statistics, <https://www.har.com/school/101912171/henderson-j-elementary-school> (last visited Oct. 3, 2019).

- Clearly inform the public of the risk.¹⁶³

If financial constraints pose a barrier to enhanced public notification, we urge the Agencies, through a SEP or otherwise, to allow the City to use part of its penalty owed to the United States and State of Texas to fund these additional public notification measures.

10. Additional improvements are needed to facilitate public engagement

The consent decree requires the City to publish certain reports to its website:

59. Public Document Repository. The City shall post to its website all final EPA-reviewed and/or EPA-approved plans, reports, or other submissions required by Section V (Compliance Requirements) and Section IX (Reporting Requirements). Each submission shall remain on the website or by link or other accepted method for at least three years.

We recommend that the consent decree be modified to require these documents be posted to the website within 24 hours of being sent to the EPA and/or TCEQ and remain available for the life of consent decree.

Further, in addition to mapping SSOs, as recommended above, we also recommend that the consent decree require the City to map its efforts to address these SSOs through planned, in-progress, and completed projects. The City may consider expanding or adapting the current map on the City's website, <https://www.buildhoustonforward.org/src/project.html>, which currently documents ongoing, paving, and street construction projects and must be required to keep this map up-to-date.

We also recommend that the City communicate with utility customers about the implementation of the consent decree as appropriate through mailers (and their email equivalent) in customer utility bills and provide information about meetings and reports relating to the City's progress in implementing the consent decree.

IX. Data Reporting & Public Information

1. The consent decree must require better reporting by the City

The ability of federal agencies, state agencies, and the public to understand the frequency and magnitude, the public health and environment impacts, and remediation options from potential Clean Water Act and Texas Water Code violations by the City's wastewater system depends on information gathered and made available by the City.

In preparing its notice of intent to sue, Bayou City Waterkeeper reviewed the City's data, which was self-reported to the TCEQ and stored in the TCEQ's databases. Between November 30, 2015 and February 13, 2016, the TCEQ changed the format of the databases storing wastewater excursion data. These changes made the data more difficult (that is, time-consuming) to analyze.

There are several fields in the older data that are not available in the data since February 13, 2016. These fields include: address, street, basin, manhole, structure type, location, flow location, system, potential impacts, excursion cause notes, corrective action, and corrective action notes. Some of the

¹⁶³ St. Louis' consent decree includes similar requirements. See St. Louis Consent Decree at 16-17, Section V.A.9.d.i., available at <https://www.epa.gov/sites/production/files/2013-09/documents/stlouis-cd.pdf>.

information that would be in these fields is contained within the newer database in a single field: INCID_COMMENT. This field contains 3,974 unique values. These values include addresses, problem descriptions, manhole identification information, and corrective action descriptions. Without significant data re-coding, it is impossible to extract from the more recent database the type of information that is readily available for excursions prior to November 30, 2015. Further, there are several fields in the more recent database in which no useful information is coded.

For the City to learn anything from its own data, it must be organized in a manner that can be more easily analyzed. The consent decree should require the City and State of Texas to maintain this data in a consistent format and collect additional data to facilitate the City's efforts to comply with the Clean Water Act.

The consent decree should require the City and/or State of Texas to maintain the following information in easily accessible electronic databases, including GIS data:

- The date, time, location, and size of any sewage overflow or discharge that is not in compliance with permit terms;
- Weather conditions associated with the overflow or discharge, if relevant (including rain amounts, flood flow levels, and/or storm surge, for example);
- The names of staff and/or contractors with information regarding the occurrence;
- Associated facility element: sewer, force main, manhole, lift station, pump station, and/or treatment facility, their nominal capacity, actual conditions, and any deviation from ordinary operational conditions;
- The location, flow condition, and extent of the affected waterbody;
- An assessment of public health and environmental risk;
- A notation of predetermined environmental justice criteria, if relevant;
- The root cause and/or contributing causes of the overflow or discharge;
- Whether that root cause and/or contributing cause requires further repair or attention, and the status of that work.

2. The consent decree must provide for ongoing water quality monitoring

The goals of the Clean Water Act to restore waterways to meet their ecological functions and support safe uses, including water-contact recreation, should be supported by the consent decree. To that end, the proposed consent decree should be revised to require ongoing monitoring and assessment to observe trends for ambient water-quality in Houston's waterways for the life of the consent decree. The required monitoring should include regular wet- and dry-weather sampling for instream concentrations of fecal indicator bacteria, such as *E. coli* and *Enterococcus*, and for quantitative microbial source tracking for human markers of fecal contamination.¹⁶⁴

Houston's waterways routinely exceed Texas's bacteriological water quality standards for infrequent primary contact and EPA's recommended bacteriological standards to limit waterborne illness during

¹⁶⁴ See, e.g., San Antonio Consent Decree at 45-48, Section V-I (2013), <https://www.epa.gov/sites/production/files/2013-07/documents/saws-cd.pdf> (requiring a Water Quality Program Plan that includes fecal bacteria sampling and quantitative source tracking of receiving waterways and stormwater outfalls, dry- and wet-weather sampling, and water-quality assessment and reporting).

both wet- and dry-weather conditions. Severe rain events, including Harvey, have resulted in documented increases in *E. coli* and other bacteria and contamination.¹⁶⁵

3. Additional improvements are needed to protect the public.

Additional provisions, currently missing from the consent decree, will further protect the public:

- Requirement to develop and implement a written Collection System Contingency and Emergency Response Plan to protect public health and welfare in the event of any sewage overflow;
- Requirements to expediently notify and protect affected public in the event of a sewage overflow;
- Procedures to provide timely notice to appropriate Federal, State, and local agencies;
- A program to ensure rapid dispatch of staff and equipment to correct or repair conditions causing or contributing to overflows;
- Sewage overflow emergency response training for City wastewater staff and contractors;
- Receiving water body monitoring, sampling, analysis and reporting following an unpermitted discharge.

The City of Atlanta's First Amended Consent Decree contains similar terms and can provide model language for the Agencies to use in Houston's consent decree.¹⁶⁶

X. Cross-Project Coordination

Regionally, Harvey has led to an increased focus on how to prevent or mitigate the damage caused by flooding. Some planned flood mitigation projects may have direct impacts on the sewer system and SSOs in Houston. They may require the City or other entities to work around or potentially relocate existing sewer lines or could potentially affect inflow and infiltration into the sewer system during storm events.¹⁶⁷ Because of the direct relationship between flood mitigation projects and SSO prevention, the draft consent decree should require the City to coordinate project development with current and future flood mitigation projects, and should require or encourage coordination of funding with flood mitigation projects where possible.

A major example of a flood infrastructure project with a direct sewer system impact is the North Canal Project. The North Canal Project seeks to cut a 1,300-foot canal immediately upstream of the confluence between White Oak and Buffalo Bayou, directly across from the University of Houston-Downtown.¹⁶⁸ As a result of this project, more water would be able to flow more quickly and more directly through the tight bend in Buffalo Bayou, which would drop the projected flood level in downtown Houston by four feet, and lower the water level upstream along White Oak Bayou.¹⁶⁹ There is, however, the possibility that a 12-foot

¹⁶⁵ Kinder Institute for Urban Research, Rice University, *E. coli Levels Up (Way Up) After Harvey* (Sep. 21, 2017), <https://kinder.rice.edu/2017/09/21/e-coli-levels-up>; Pingfeng Yu, et al, *Elevated Levels of Pathogenic Indicator Bacteria and Antibiotic Resistance Genes after Hurricane Harvey's Flooding in Houston*, *Environmental Science & Technology Letters* 2018 5 (8), 481-486 (July 23, 2018), available at <https://cpb-us-e1.wpmucdn.com/blogs.rice.edu/dist/3/1390/files/2012/02/266-2jxakx9.pdf>

¹⁶⁶ Atlanta's First Amended Consent Decree, at p.39-41, available at <https://www.epa.gov/sites/production/files/documents/atlanta1999-cd.pdf>

¹⁶⁷ Regarding the latter projects, inflow and infiltration may increase or decrease depending upon the nature and placement of the project.

¹⁶⁸ Zach Despart and Jasper Scherer, *FEMA approves initial funding for long-sought North Canal flood project*, *Houston Chronicle* (Oct. 11, 2019), available at <https://www.houstonchronicle.com/news/houston-texas/houston/article/FEMA-approves-initial-funding-for-long-sought-14515615.php>.

¹⁶⁹ *Id.*

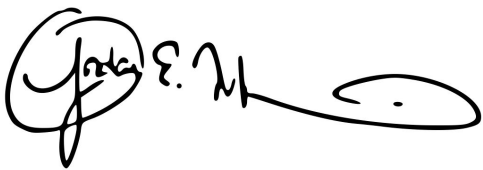
sewer pipe would need to be moved to complete the project.¹⁷⁰ Should the sewer pipe need to be moved, the City must ensure that such a move would avoid adversely affecting its SSO projects under the consent decree and also determine, in advance, whether there are opportunities to use the move to further reduce SSOs and benefit its other projects, and share funding with the North Canal Project.

Additionally, the City should coordinate the North Canal Project with the green infrastructure projects proposed in this comment letter at the University of Houston-Downtown. See Section V-7(a). The proposed green infrastructure projects all focus on retaining stormwater to regulate its flow during wet weather events, which can have the dual effect of reducing flooding and reducing I/I into the sewer system.¹⁷¹ The scope of each of those green infrastructure projects could be expanded geographically to better serve the goals of both the draft consent decree and the North Canal Project. For example, the proposed green roof incentive program and permeable pavement and bioswale programs could be expanded to include all of downtown Houston, while additional sites could be identified for stormwater wetlands and permeable pavement and bioswale projects upstream of the canal along both White Oak and Buffalo Bayou.

Coordination, however, is not limited to the North Canal Project. After Harvey, Harris County created a list of 237 projects in and around Houston to improve resilience and mitigate flooding, which will be partially funded by a \$2.5 billion flood bond.¹⁷² Each of these projects should be evaluated for coordination with this draft consent decree, both to avoid interference and to identify areas where projects can complement each other and share funding where appropriate.

Thank you for the opportunity to submit these comments. Bayou City Waterkeeper welcomes all opportunities to discuss these comments and find ways to implement our recommendations before the consent decree is final. Together, we can give Houstonians a consent decree that not only improves local water quality, but also engages communities, addresses historic inequities, invests in green infrastructure, reduces local contributions to climate change, and makes Houston more resilient for generations to come.

Sincerely,



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¹⁷⁰ Mike Morris, Houston's sprawling drainage project would help hundreds of homes along White Oak Bayou, Houston Chronicle (Mar. 19, 2018), available at <https://www.houstonchronicle.com/news/article/Houston-s-sprawling-drainage-project-would-help-12759536.php#photo-15245230>.

¹⁷¹ *Id.*

¹⁷² Bond Program Project List, Harris County Flood Control District (Jan. 4, 2019), available at <https://www.hcfd.org/2018-bond-program/bond-program-project-list/>.